

Epic Games, Inc. v. Apple Inc.,
Case No. 4:20-cv-05640-YGR

Apple Inc.’s
Proposed Findings of Fact
and
Conclusions of Law

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REFERENCE TABLE FOR PROPOSED CONCLUSIONS OF LAW

Claim/Issue	Count	Section
Market Definition	All Epic Counts	§ II
<i>Epic's Sherman Act Claims</i>		
Sherman Act Section 2 – Monopoly Maintenance in the “iOS App Distribution Market”	Epic Count 1	§ III.B.i
Sherman Act Section 2 – Monopoly Maintenance in the “iOS In-App Payment Processing Market”	Epic Count 4	§ III.B.ii
Sherman Act Section 2 – Essential Facility	Epic Count 2	§ III.B.iii
Sherman Act Section 1 – Tying	Epic Count 6	§ III.C.i
Sherman Act Section 1 – Unreasonable Restraint of Trade in the “iOS App Distribution Market”	Epic Count 3	§ III.C.ii
Sherman Act Section 1 – Unreasonable Restraint of Trade in the “iOS In-App Payment Processing Market”	Epic Count 5	§ III.C.iii
Affirmative Defenses – Failure to Join an Indispensable Party	All Epic Counts	§ III.D.i
Affirmative Defenses – Waiver and Estoppel	Epic Counts 1–6	§ III.D.ii
Affirmation Defenses – Limitations on Actions	Epic Counts 1–6	§ III.D.iii
Affirmative Defenses – <i>Noerr-Pennington</i> Doctrine	All Epic Counts	§ III.D.iv
<i>Epic's State-Law Claims</i>		
Cartwright Act	Epic Counts 7–9	§ IV.A

California Unfair Competition Law	Epic Count 10	§ IV.B
Affirmative Defenses – Waiver and Estoppel	Epic Counts 7–10	§ IV.C.i
Affirmative Defenses – Limitations on Actions	Epic Counts 7–10	§ IV.C.ii
<i>Epic’s Remedies</i>		
Declaratory Judgment	All Epic Counts	§ V.A
Sherman Act / Clayton Act Remedies	Epic Counts 1–6	§ V.B
State-Law Remedies	Epic Counts 7–10	§ V.C
<i>Apple’s Claims</i>		
Breach of Contract	Apple Count I	§ VI.A
Breach of Implied Covenant of Good Faith and Fair Dealing	Apple Count II	§ VI.B
Quasi-Contract / Unjust Enrichment	Apple Count III	§ VI.C
Indemnification	Apple Count VII	§ VI.D
Affirmative Defenses – Illegality	Apple Counts I, II, and VII	§ VI.E.i
Affirmative Defenses – Void as Against Public Policy	Apple Counts I, II, and VII	§ VI.E.ii
Affirmative Defenses – Unconscionability	Apple Counts I, II, and VII	§ VI.E.iii
<i>Apple’s Remedies</i>		
Compensatory Damages	Apple Counts I–II	§ VII.A
Unjust Enrichment	Apple Count III	§ VII.B
Declaratory Judgment	Apple Count VI	§ VII.C
Indemnification	Apple Count VII	§ VII.D

PRELIMINARY STATEMENT

The Court presided over a three-week bench trial in May 2021, during which each party presented a dramatically different view of Apple’s iOS “ecosystem.” As the Court observed during trial, the App Store is a platform that connects app developers with iPhone and iPad users; Apple makes its proprietary technology and tools available to Epic and other developers who agree to the terms of a standardized license agreement, and charges a commission on a subset (paid downloads and in-app purchases of digital content) of the many billions of mostly free transactions enabled by the platform. *See* Trial Tr. 1709:2–1711:6 (Evans). While the App Store has undisputedly conferred substantial benefits on both developers (including Epic) and consumers, Epic has challenged certain aspects of Apple’s business model under the antitrust laws. The central question is now whether Epic has carried its burden of proof on each element of its claims.

According to Epic, “Apple’s conduct has resulted in the monopolization of two markets: The iOS app distribution market by blocking the distribution of iOS apps outside the App Store, and the iOS In-App Payment Solutions Market by mandating use of Apple’s IAP for digital goods.” Trial Tr. 12:5–9 (Epic Opening Statement). Epic continues: “Apple has engaged in separate monopolistic conduct in each market that has led to specific anticompetitive effects in the form of higher prices, reduced innovation, less choice, and reduced customer service offerings.” Trial Tr. 12:10–13 (Epic Opening Statement). Epic has proposed a sweeping injunction that would require Apple to permit sideloading, third-party app stores, stores-within-stores, and alternative in-app payment options—all under the Court’s ongoing administration. *See* Dkt. 276-1.

Apple, in contrast, maintains that the relevant market consists of U.S. digital game transactions on a variety of substitute online stores available on multiple platforms—tablets, smartphones, laptops, PCs, Macs, and game consoles. Trial Tr. 59:5–21 (Apple Opening Statement). Apple contends that it lacks monopoly or market power in that market, and that the challenged restrictions are lawful. Apple argues that its conduct is supported by a variety of procompetitive justifications, including protecting the safety, security, privacy, and reliability of devices and users, as well as protecting Apple’s extensive intellectual property rights. According to Apple, the App Store has led to vastly increased output of game transactions (and app transactions more generally), higher quality, greater choice, and stable or lower prices. And Apple argues that “Epic’s requested relief would undo everything that [Apple’s] engineers and businesspeople have built and that consumers have trusted and loved.” Trial Tr. 51:20–22 (Apple Opening Statement).

Importantly, Epic has the burden of proof on each element of its claims. Epic has to prove the relevant market; prove that Apple has monopoly or market power in the relevant market; prove that Apple engaged in unlawful conduct that had anticompetitive effects and is not redeemed by a procompetitive justification; and prove that Epic suffered antitrust injury remediable by an injunction. *See generally* Dkt. 276 at 8–21, 51–67.

On every material issue, Epic failed to meet its burden of proof. Epic failed to prove its proposed market, or that Apple has the requisite power in any relevant market. Epic failed to prove that Apple engaged in unlawful conduct, that the challenged conduct had anticompetitive effects, or that Apple’s procompetitive justifications are pretextual. And Epic failed to prove that this Court

should (or could) order Apple to fundamentally change the business model that has made the App Store so successful—for Apple *and* for developers and consumers.

It's clear that Epic would prefer not to pay the 30% commission charged by Apple on in-app purchases of digital content. But the evidence shows that this rate is competitive. It was adopted (by Steam) before the App Store launched, and has remained the market rate for digital game transactions. Virtually every other store has adopted the same rate, which a 2019 Epic board presentation described as “industry standard.” DX-3955.003.



Ex. Expert 6 ¶¶ 161–62, 256 (Hitt). When Epic filed suit, the only exception of any note to this market reality was the Epic Games Store, which offers lucrative exclusive deals and charges a below-cost 12% commission in an effort to attract developers. Time will tell whether Epic’s model will evolve if EGS attains critical mass (beyond the 500 apps with which it started the year) or whether stores on other platforms will seek to emulate Epic’s pricing. But this lawsuit does not ask, let alone require, the Court to order Apple to charge a different commission rate—which even Dr. Evans agrees has effectively declined over time. PX-1050.1.

These and a number of other issues are addressed in detail below, with citations to the record and authorities. But to avoid losing the forest for the trees, the key points are summarized here:

Market Definition. Defining the relevant market is a “threshold step in any antitrust case.” *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 992 (9th Cir. 2020). If an antitrust plaintiff fails to prove its proposed market definition, its claims fail. *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1121–23 (9th Cir. 2018); *M.A.P. Oil Co. v. Texaco Inc.*, 691 F.2d 1303, 1306–08 (9th Cir. 1982).

Epic had ample time and resources to develop its case. It hired legal, public relations, and economic consultants long before the complaint was filed. It strategically proposed a convoluted series of markets designed to allow it to sue two defendants (Apple and Google) for monopolizing substitute products in separate suits, while not suing other companies (such as Microsoft) that engage in similar practices. As a result of this strategic decision, Epic’s proposed market

definitions (for distribution and payment solutions) are both limited to the iOS ecosystem; that is, they are “single-brand” markets limited to Apple’s own products and services.

Single-brand markets have aptly been called the unicorns of market definition: One reads about them in books, but they are rarely observed in the real world. Dkt. 118 at 13 (Preliminary Injunction Order) (“Single-brand markets are, at a minimum, extremely rare” (citing *Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008))). Nevertheless, Epic chose to assert not one but *two* single-brand markets (in “iOS app distribution” and “iOS payment solutions”), thus shouldering a heavy burden. As one of Apple’s economists explained, Epic’s claim of monopolization is tautological given its failsafe market definition. Trial Tr. 1895:19–1896:7 (Schmalensee). Epic’s approach would also compel the conclusion that Microsoft (Xbox), Sony (PlayStation), Nintendo (Switch), and Google (Google Play) are monopolists. See Trial Tr. 239:18–240:4 (Sweeney) (agreeing that in general, console makers “exercise a monopoly on distribution of purely digital games with respect to their platforms”).

Epic failed to prove, however, that the relevant product market should (or even can) be limited to iOS or any other operating system or platform. The legal standard is reasonable interchangeability of use. *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956). Epic’s iOS-only market impermissibly lumps together game and non-game transactions that its own expert agrees are not substitutes. Trial Tr. 1642:9–19 (Evans). Nor does Epic seek to defend its single-brand definition as a cluster market. Trial Tr. 1641:4–6, 2445:25–2446:1. As such, the market must be defined with respect to obvious alternatives for game developers and consumers. Substitutes do not have to be perfect, or total. Trial Tr. 2296:24–2297:2 (Cragg); *Hicks*, 897 F.3d at 1121. And online game stores—on PCs, on Macs, on Android devices, on laptops, on Windows and Amazon tablets, and on game consoles from Microsoft, Sony, and Nintendo—offer substitute game transactions.

Apple’s experts presented unrebutted empirical evidence of substitution between iOS, Android, game consoles, PCs, and tablets. For example, Professor Hitt showed that when *Fortnite* launched on Nintendo Switch, players shifted their in-game transactions from other platforms to the Switch. Ex. Expert 6 ¶¶ 86–93 (Hitt). Dr. Cragg’s analysis confirmed this conclusion. Dr. Hitt (and Dr. Evans) also showed that when *Fortnite* was removed from the App Store, iOS players – including those who had never made a *Fortnite* transaction outside iOS – shifted spending to *Fortnite* on other platforms. Ex. Expert 6 fig. 20 (Hitt). Indeed, Epic actively encouraged iOS users to switch to other platforms when it triggered the hotfix. DX-3724.002.

The App Store is a two-sided transaction platform that connects app developers with customers. See *Amex*, 138 S. Ct. at 2286. As such, it competes with other such platforms. And pronounced indirect network effects constrain Apple’s ability to raise prices—as it never has done. Trial Tr. 3988:25–3989:5, 3991:3–8 (Cook). Notwithstanding prior writings emphasizing their importance, Dr. Evans ignores indirect network effects, as well as substitution options available to both developers and consumers.

The factors set forth in *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962)—which the parties agree are controlling, Trial Tr. 2070:13–2071:4, 2106:9–2107:2—all indicate that the relevant market is for digital game transactions. There is strong industry and public recognition of an online game market; games have distinctive characteristics and uses; they involve specialized

technologies; games have distinct developers and consumers; they take advantage of distinct monetization structures; their average commission rate is different than other categories of apps; and there are specialized vendors that offer digital game transactions (including the Epic Games Store).

Epic did not prove that Apple has substantial market (or monopoly) power in the relevant market for digital game transactions. Epic offered no direct evidence of such power and Epic’s experts did not opine that indirect evidence (such as market share) could establish market much less monopoly power. Epic’s effort to portray Apple as a “sleepy monopolist” not willing to invest in innovation fails in the face of evidence of constant improvements in the App Store to the benefit of both developers and consumers; indeed, it is undisputed that Apple has spent more than \$100 billion in research and development to improve the iOS ecosystem, including the App Store. In short, there is nothing here to suggest that Apple dominates the market for digital game transactions.

Conduct and Consequences. Epic challenges Apple’s choice to offer developers and consumers access to a curated App Store and a protected ecosystem. The restrictions challenged by Epic were business decisions that Apple made when it created the iOS ecosystem long ago—which Epic’s lead expert admits were “benign” when adopted, Trial Tr. 1673:12–17 (Evans), and from which Apple has never deviated. First, when the iPhone was launched in 2007, Apple decided to depart from the PC (and Mac) model and design iOS and the iPhone to prohibit “sideloading,” or the direct download of applications onto the device. Trial Tr. 3850:21–24 (Cook); Trial Tr. 2722:10–2723:5 (Schiller). Second, when the App Store debuted in 2008, Apple decided that all native iOS apps developed using Apple’s proprietary software would have to be distributed through the App Store (and subject to the App Review Guidelines). Trial Tr. 2738:15–21 (Schiller). And third, in 2009, Apple enabled in-app purchases of digital content using the App Store’s IAP functionality, and required developers distributing digital content to use this feature—which allows Apple to collect payments and remit them to developers after deducting its commission. Trial Tr. 2863:18–3864:2, 3913:5–6 (Cook); Trial Tr. 2798:12–13, 3187:1–5 (Schiller).

Epic wants to force Apple to permit direct downloads, alternative distribution, and alternative in-app payment solutions. As discussed further below, this would effectively require Apple to make its platform (and its intellectual property) available to Epic and other developers for no compensation, and in a way that would destroy the competitive differentiation that Apple has carefully cultivated between iOS and other devices. But the Court need not reach the question of remedy because Epic has failed to establish that the challenged restrictions are unlawful.

“If a monopolist’s design change is an improvement”—that is, it provides any “benefit to consumers”—“it is necessarily tolerated by the antitrust laws.” *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 1000 (9th Cir. 2010); *see also Oahu Gas Serv., Inc. v. Pac. Res., Inc.*, 838 F.2d 260, 369 (9th Cir. 1988) (courts have “consistently rejected antitrust liability for a monopolist’s decision about when or whether to market new products”).

The iPhone and its operating system were revolutionary. Related restrictions challenged by Epic were all genuine product improvements. They were design choices, deliberately made by Apple, to improve the safety, security, privacy, reliability, and quality of the iOS ecosystem. Trial Tr. 302:19–21 (Sweeney). As just one example, IAP enabled the “freemium” business model for

developers (from which game app developers, in particular, have benefited spectacularly). Trial Tr. 2791:11–18 (Schiller); Trial Tr. 956:18–22 (Fischer); DX-3734.030.

Epic has not shown that these design choices have resulted in reduced output or increased prices. On the contrary, the evidence is undisputed that output (however measured) has increased explosively since the App Store’s debut. Ex. Expert 6 ¶ 184 & Fig. 45 (Hitt) (digital game transactions); *see also* DX-4810 (App Store game transactions); DX-4812 (all App Store transactions). At the same time, Apple has never increased its commission rate, and has adopted a number of rules over the years that effectively reduce its commission rate. Moreover, when free transactions are taken into account (as they should be), Apple’s average commission is substantially lower than 30%—approximately 4.1% for all transactions and 8.7% for digital game transactions in 2019. DX-4803. And as Apple’s increasing R&D expenditures and the constant stream of new developer tools show, quality has improved over time, resulting in a quality-adjusted price decrease. *See* DX-4581.026.

Against all of this, Epic argues that Apple *could* have chosen to do things differently. But as the Ninth Circuit recently emphasized, “novel business practices—especially in technology markets—should not be conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use.” *Qualcomm*, 969 F.3d at 990–91. The market for digital game transactions is a dynamic and evolving one, with new offerings—including game streaming—serving as competitive constraints on Apple and other market participants.

Moreover, “[t]here is no duty to deal under the terms and conditions preferred by a competitor’s rivals.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016). Apple treats all developers (by app category) the same, and thus has no duty to deal with Epic on Epic’s preferred terms. *Qualcomm*, 969 F.3d at 995. Epic may not like the terms of Apple’s license agreement, but that does not make those terms unlawful.

Even if Epic’s complaints otherwise had merit, the restrictions of which Epic complains are supported by a number of procompetitive justifications, including Apple’s well-known commitment to the security and privacy of its customers. Trial Tr. 2738:15–24 (Schiller). Epic’s security expert admitted that nobody does it better than Apple when it comes to security. Trial Tr. 2708:13–17 (Mickens). And Apple’s witnesses persuasively explained at trial how the prohibitions against sideloading and alternative distribution protect security and privacy. Trial Tr. 1102:18–1103:24 (Kosmynka); Trial Tr. 3388:24–3389:12, 3450:4–8, 3501:10–18, 3505:9–13 (Federighi). Indeed, “third-party stores . . . were the primary source of malware being distributed in the Android environment.” Trial Tr. 3414:25–3415:6 (Federighi).

Another legitimate business reason for the challenged conduct is Apple’s protection of its intellectual property. Epic admits that it uses a number of Apple’s proprietary tools—including software development kits (SDKs) and application programming interfaces (APIs)—to develop native iOS apps. Apple licenses these tools to Epic and other developers subject to contractual terms and conditions, and it is well-recognized that such licensing arrangements are procompetitive. Ex. Expert 12 ¶ 40–42 (Malackowski). Apple has invested billions of dollars into the development of the iOS ecosystem—Apple is entitled to a return on its investments, including by charging a commission on specified transactions that is efficiently collected through IAP. Epic

has no entitlement to access and use Apple’s intellectual property *at all*, much less on the terms it has demanded here.

Epic’s efforts to show that Apple’s procompetitive justifications are “pretextual” fell flat at trial. Epic was required to prove either that steps undertaken to protect (for example) security and privacy were a façade for anticompetitive intent, *see McWane v. FTC*, 783 F.3d 814 (11th Cir. 2015), or did not actually provide such protection, *see Image Tech. Servs. v. Eastman Kodak Co.*, 125 F.3d 1195, 1219 (9th Cir. 1997). Epic proved neither as to any of the business justifications put forward by Apple. Rather, Epic pointed to a relative handful of documents taken out of context to suggest that Apple’s efforts were ineffectual, while ignoring the evidence of continued innovation and improvement actually undertaken by Apple. In fact, Epic’s CEO, Tim Sweeney, testified that he uses an iPhone because Apple protects his privacy better than Google. Trial Tr. 302:22–303:4 (Sweeney).

The evidence at trial established that when Apple introduced the iPhone, it consciously decided to include restrictions that previous generations of computers—including its own Mac, which has a different risk profile—did not have, precisely because it wanted the iPhone to be different. Trial Tr. 3363:17–20, 3392:12–20 (Federighi). Competing smartphones running the Android operating system do not have similar restrictions today. Consumers therefore have a choice as to the type of ecosystem they want to use. Epic, ironically, seeks to use the antitrust laws to force iOS to be more like Android, eliminating a key differentiator between competitors and depriving consumers of the choices they currently have.

Remedy. Epic asks the Court to impose a sweeping injunction that would essentially require Apple to provide unlimited access to its rivals and to forgo compensation for the use of its intellectual property. This amounts to a compulsory license, allowing Epic and others to free-ride on the billions of dollars that Apple has invested in the iOS ecosystem. Trial Tr. 3643:10–17 (Malackowski). It would impermissibly require Apple, with its long history of proprietary and tightly integrated hardware and software design, to provide forced interoperability with other platforms. *See Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542–43 (9th Cir. 1983). And it would deny Apple the ability to enforce the technical and contractual terms, policies, and guidelines designed to protect the integrity of its platform for both developers and users.

The Court ultimately need not address the many flaws and defects in Epic’s proposed injunction, because there is no unlawful conduct to enjoin. It should be noted, however, that at trial, Epic introduced no affirmative evidence in support of its requested injunction. In questioning Apple witnesses, Epic’s counsel suggested (with no evidentiary basis) various things that might or might not be permitted, while Epic’s experts (on cross-examination, and in response to questioning by the Court) confessed that they had no idea how any injunction would be implemented. *See, e.g.*, Trial Tr. 2417:16–19 (Evans) (“THE COURT: Would a rogue app store include one that offers pornography? THE WITNESS: So I think that’s—I don’t know if I have a good answer to that one, Your Honor.”). The trial evidence provides no basis on which the Court could conclude that Epic’s requested injunction would increase output, lower prices, enhance innovation, or improve choices for either developers or consumers.

Apple’s CEO, Tim Cook, testified that the result of Epic’s requested relief would be a “toxic kind of a mess” that would be “terrible for the user.” Trial Tr. 3884:18–3885:11 (Cook). He continued:

“It would also be terrible for the developer because the developer depends on the [App Store] being a safe and trusted place where customers want to come and feel good about transacting.” Trial Tr. 3885:9–11 (Cook). Epic offered no proof that its injunction would be beneficial to either consumers or developers. The balance of hardships therefore weighs decisively against injunctive relief.

Epic also failed to prove that its proposed injunction, if implemented, would benefit the public interest. Epic appears to be interested only in itself; indeed, while Epic’s counsel began the trial by announcing that Epic “is suing for change, not just for itself but for all developers,” Trial Tr. 12:3–4 (Epic Opening Statement), Mr. Sweeney contradicted her and testified under oath that he would have accepted a “side deal” that benefited only Epic and no other developer, Trial Tr. 337:13–338:6 (Sweeney). Apple refused to afford Epic special treatment, and Epic failed to prove at trial that Apple acted unlawfully in doing so.

Epic did not prove that it would be irreparably injured in the absence of injunctive relief, or that legal remedies would have been inadequate. As the Court previously observed in this litigation, “[t]he current predicament is of [Epic’s] own making.” Dkt. 118 at 30 (Preliminary Injunction Order). Simply put, Epic picked a fight with Apple and lost.

While Epic is entitled to no relief on its federal or state antitrust or unfair competition claims, Apple is entitled to recover on its counterclaim for breach of contract. Epic stipulated to liability for breach of contract, subject to the Court’s resolution of its affirmative defense of illegality. Dkt. 474. Because Apple’s conduct is not unlawful, Epic’s contract defense fails. Accordingly, Epic must pay Apple \$3,650,315.70 (30% of the revenue Epic collected from users in the *Fortnite* app on iOS through Epic Direct Payment through October 2020), plus 30% of any additional revenue Epic has collected through Epic Direct Payment on iOS since then, in contract damages. Under the contractual indemnification provision, Epic also must pay the attorneys’ fees and expenses Apple incurred in this lawsuit.

PROPOSED FINDINGS OF FACT

I. Introduction

1. With the launch of the iPhone in 2007, Apple created the revolutionary and unique iOS ecosystem. Since then, Apple’s development, curation, and protection of that ecosystem has benefitted consumers and developers alike. Apple’s investment in that ecosystem—billions of dollars spent on innovation and invention of new intellectual property—has created opportunities that never would have existed, and even grown the economy. All the while, Apple has balanced the value of providing third-party developers access to the iOS ecosystem with its relentless focus on the reliability, safety, security and privacy that consumers hold dear.
2. Apple’s decision to open its iOS platform to third-party developers has resulted in massive procompetitive benefits. App Store debuted in 2008 with just 500 apps. Since then, output has exploded—with millions of consumers downloading billions of apps created by thousands of developers. At the same time, prices stayed flat or decreased: Apple has charged developers only a \$99 annual fee plus a 30% commission on paid apps and in-app purchases of digital content. Many developers and app categories pay a lower commission. And the vast majority of apps are free to download and result in no commission to Apple. The App Store has become an economic engine, generating billions of dollars in revenue for businesses that pay zero commission to Apple.
3. The App Store is a two-sided transaction platform that connects app developers and consumers. In this case brought by a game developer, the relevant transactions are for digital games. The App Store competes with many other digital games transaction platforms, including those available on Android smartphones; Windows, Amazon, and Android tablets; mobile gaming devices such as the Nintendo Switch; game consoles such as Microsoft’s Xbox and Sony’s PlayStation; and PCs. And a new crop of online game streaming services promises yet more competitive pressure.
4. Epic’s flagship game, *Fortnite*, illustrates the competitive landscape. Apple supports “cross-platform” play and cross-platform transactions. The same consumer can make in-app purchases of V-Bucks on her iPhone (through the browser) during a lunch break, and on a console at home in the evening. Apple (unlike some of its competitors) allows “cross-wallet” play, so that in-game purchases—called V-Bucks in *Fortnite*—can be made on one device and used on another. In other words, an iOS user can purchase V-Bucks on a PC and then (prior to *Fortnite*’s removal) use them in *Fortnite* on her iPhone or iPad—with Epic owing not even a penny’s commission to Apple. Trial Tr. 1824:9–1825:1 (Athey). Mr. Sweeney testified that buying V-Bucks on the Epic website was not “attractive,” but had no data on that. Trial Tr. 334:21–335:12 (Sweeney). It also turned out that Mr. Sweeney equated customer convenience with the ability to make impulse purchases. Trial Tr. 336:6–337:3 (Sweeney).
5. Apple has no monopoly or market power in the relevant product market for game app transactions. And there is no claim that it had any such power when the restrictions at issue were imposed around the launch of the App Store. Developers are free to create apps for

any other platform, and can create web apps for iOS users with no restrictions whatsoever. If developers choose to create native iOS apps using Apple’s intellectual property—including Software Development Kits (“SDKs”) and 150,000 Application Programming Interfaces (“APIs”), which are protected by patents, copyrights and trademarks—they must agree to the terms of Apple’s Developer Program License Agreement (“DPLA”), including distribution through the App Store.

6. Apple has always maintained a “walled garden” approach to the distribution of native iOS apps created using Apple’s proprietary software. Using both proprietary technology and human reviewers, Apple reviews every app and app update submitted for distribution through the App Store for functionality and content, as well as for malware and other harmful code. iOS customers know that if they download an app from the App Store, it will work—and it will not steal their data. Apple made this decision based on its years of experience with PCs, including its own macOS operating system, and its belief that the unique role mobile phones and tablets play in people’s lives required greater protections to ensure reliability, safety, and privacy.
7. Apple has chosen to monetize the App Store by charging at most a 30% commission on paid apps and in-app purchases of digital content. Competing platforms charge the same or a higher commission. Moreover, as part of the integrated iOS functionality, Apple has developed an API called “In-App Purchase” (“IAP”) to provide a secure and reliable mechanism to deliver digital content to customers and receive payment for that content. Among many other benefits, IAP allows Apple to collect its commission and then remit the balance to developers.
8. Apple’s policies are set forth transparently in the DPLA and its incorporated App Review Guidelines, and apply to all developers equally. While certain categories of apps (for example, subscription services) or developers (for example, those earning less than \$1 million in annual revenue) pay a reduced commission, apps and developers within those categories are treated alike. Developers use IAP to deliver digital content through iOS regardless of what price (including zero) they choose to charge for that content.
9. The restrictions challenged by Epic in this case—a subset of Apple’s app distribution and review policies—are contractual terms on the licensed use of Apple’s intellectual property. Apple, as the property owner, has chosen to make its property available to others—but only on its own terms. Developers who do not agree with those terms are free to develop web apps, not using Apple’s proprietary software and tools, and distribute them directly to iOS users.
10. These policies support their procompetitive purposes. The curation of the App Store allows Apple to optimize the customer experience and protect the security and privacy of users and their data. App review ensures functionality, and protects customers from pornography and malware. Indeed, the iOS ecosystem is widely and correctly recognized as the safest, most secure, and most reliable mobile computing platform in the world. This benefits developers as well, since native iOS apps approved for distribution through the App Store find an established customer base.

11. Epic has benefited handsomely from its contractual relationship with Apple, which goes back to 2010. Epic has used Apple's proprietary SDKs, and thousands of proprietary APIs, to develop games for iOS users. During the two years that Fortnite was available on the App Store, Epic earned more than \$700 million in revenue from iOS customers.
12. Epic objects to paying Apple a 30% commission—even though it pays the same commission to many other platforms on which Epic distributes *Fortnite*. When Apple refused Epic's request for a special deal, Epic included secret code in a Fortnite update and triggered it, using a server-side "hotfix," to allow iOS customers to purchase V-Bucks without paying Apple's commission. This was a breach of the DPLA (as Epic concedes), so Apple terminated Epic's developer privileges and removed Fortnite from the App Store.
13. This was all part of a pre-planned media strategy called "Project Liberty." Epic retained Cravath, Swaine & Moore LLP and a public relations firm in 2019, and this lawsuit is the culmination of that effort. Epic seeks to portray Apple as the "bad guy" so that it can revive flagging interest in *Fortnite*. Yet, ironically, when Epic got kicked off the iOS platform, it told players that they could continue playing on consoles, PCs, and other devices—demonstrating the existence of competition and the absence of monopoly.
14. Apple is not a monopolist in any relevant market. Apple does not have market power over digital game transactions. Whether measured in apps or in-app purchases, output has increased while prices have stayed constant or fallen. The restrictions in Apple's license agreements protect its intellectual property and serve a variety of procompetitive benefits including reliability, security, and privacy. Epic just wants to free-ride on Apple's innovation.
15. There is no antitrust violation on the facts presented here.

II. Apple's Values: Cutting-Edge Technology, World-Class Design, And Brand-Level Commitment To Privacy

16. Apple is committed to certain core principles. Trial Tr. 3845:7–9 (Cook). Chief among these is designing, building, and then improving world-class technology products. *Id.*
17. These products are designed not only to "just work" but also be powerful and easy-to-use. Trial Tr. 3845:10–3846:2, 3933:5–6 (Cook) (describing Apple's "maniacal focus" on the customer). Prioritizing the user is key. Trial Tr. 3852:10–20 (Cook). Apple products are designed to be simple, not complex, and to deliver a seamless, reliable, and intuitive experience. Trial Tr. 3845:10–3846:2 (Cook).
18. Apple also believes privacy is a human right. Trial Tr. 3846:12–18, 3937:8–11 (Cook).
19. To these ends, Apple has invested heavily in privacy, and builds its products from the ground up so that privacy is a "core part of [the] design process, not an add-on, sort of after-the-fact kind of thing." Trial Tr. 3846:19–3847:1 (Cook).
20. These commitments have allowed Apple to establish a reputation for security and reliability; consumers know they can trust that with an Apple product, they will enjoy a

safe, convenient experience. Trial Tr. 1689:16–21, 1690:6–8 (Evans); Trial Tr. 2700:3–14 (Mickens).

III. Apple Launches Two Revolutionary Innovations: The iPhone and The App Store

A. Apple revolutionizes mobile communication with the introduction of the iPhone

21. Apple “reinvent[ed] the phone” when it released the iPhone in June 2007. DX-3426; Trial Tr. 2719:20–2721:6 (Schiller).
22. The iPhone was a new entrant into a market with several established competitors, including Blackberry. Trial Tr. 2719:20–2721:9 (Schiller).
23. But the iPhone was different. Trial Tr. 2721:7–11 (Schiller). It featured a multi-touch interface, powerful hardware and advanced software architecture. Ex. Expert 12 ¶ 27 (Malackowski). In other words, the iPhone combined three separate products—a revolutionary mobile phone, a widescreen iPod with touch controls, and a breakthrough Internet communications device with desktop-class email, web browsing, searching and maps—into one small handheld device. Trial Tr. 2719:20–2721:6 (Schiller).
24. Thus, the iPhone introduced an entirely new user interface based on a large multi-touch display and pioneering new software, letting users control the iPhone with just their fingers. DX-3426; Trial Tr. 2719:20–2721:6 (Schiller).
25. It also ushered in an era of software power and sophistication never before seen in a mobile device, completely redefining what users can do on their mobile phones. DX-3426; Trial Tr. 2719:20–2721:6 (Schiller). The iPhone was revolutionary not just for its hardware, but for the operating system that ran on it, called iOS. Trial Tr. 2721:18–2722:9 (Schiller). The operating system is a foundational layer of software; it allows applications to run and access features of the device, such as the touch screen. Ex. Expert 12 ¶ 27 (Malackowski).
26. The iPhone was, in short, “revolutionary” when it first came to market. DX-3426.001. It made the idea of a smartphone real, providing access to the internet, a real web browser, and MultiTouch—many of the features that remain at the core of what the smartphone is today. Trial Tr. 2719:20–2721:6 (Schiller); Trial Tr. 687:6–12 (Grant).

B. Apple did not originally allow third-party developers to build native apps for iOS

27. The original iPhone came preinstalled with a few native apps, all of which were developed by Apple. Trial Tr. 2728:18–19 (Schiller). Third-party native applications could not be downloaded to the iPhone. Trial Tr. 2727:17–19 (Schiller); Trial Tr. 3359:20–23 (Federighi). Apple believed its chosen business model for the iPhone, as opposed to models that license freely to other devices, was the best model for product quality, security, and privacy. Trial Tr. 2724:14–2725:2, 2738:15–24 (Schiller).
28. When Apple launched the iPhone, Apple indicated that third-party developers could make web applications for distribution through the Safari web browser. PX-0880.7 (“Last June, when we launched the iPhone, we also launched Web Applications as a way for developers

to build applications using Web technologies for the iPhone. This has been incredibly successful.”). Web apps are applications that run on a web browser. Trial Tr. 699:8–13 (Grant).

- 28.1 Apple enabled “Web Applications” as a way for developers to build applications using Web technologies for the iPhone. Trial Tr. 2727:23–2728:4 (Schiller).
 - 28.2 Apple added the ability to take icons and place them directly on the home screen of an iPhone so you can just tap on an icon and launch right into the Web application. PX-0880.007.
 - 28.3 By March 2008, there were well over 1,000 Web applications available for the iPhone. PX-0880.007.
 - 28.4 Web apps can be substitutes for native apps, but each app or web app is subject to differing demands and requirements. After detailing the differences between web apps and native apps for a consumer, Mr. Patel of Nvidia testified the differences can be “complicated.” Trial Tr. 432:4–11, 442:24–443:3 (Patel). As Mr. Grant said, web apps “certainly can be” substitutable “for certain types of apps.” Trial Tr. 711:10–12 (Grant).
 - 28.5 Apple made a clear judgment from the beginning that the Internet was an open avenue for all developers, but was cautious when it came to “sideloading”—permitting the installation of software from external third-party sources—because that involved placing software on Apple devices which could interact in harmful ways with Apple’s iOS. Trial Tr. 2728:5–17, 2729:15–2730:17 (Schiller).
29. To this day, Apple continues to make clear to all developers that the App Store is not the only way to make software available to iOS users. In the App Store Review Guidelines, Apple advises developers that “[i]f the App Store model and guidelines are not best for your app or business idea that’s okay, we provide Safari for a great web experience too.” PX-2790.1. One developer called by Epic “think[s] it is pretty easy” for users of its app to purchase subscriptions through Safari rather than the native app. Trial Tr. 418:4 (Simon).
- 29.1 From a consumer perspective, accessing the same content through a native app or a web app “are going to be very similar experiences dependent on what the developer does to create the experience.” Trial Tr. 990:13–16 (Kosmynka). “[W]eb apps go beyond just use in an individual browser [and] in the case of iOS, [they] can be saved to the home screen,” Trial Tr. 990:7–9 (Kosmynka), in just “two taps,” Trial Tr. 991:2–6. And while web apps on iOS are run through Safari, consumers experience a “headless Safari” meaning a consumer “would not see a search bar.” Trial Tr. 990:9–11 (Kosmynka). Developers have the capacity to make a web app experience so similar to a native app experience that consumers can think they are using a native app when in reality they are using a web app. Trial Tr. 1046:7–14 (Kosmynka). Accordingly, apps can be “successful using just a web app.” Trial Tr. 1046:4–6 (Kosmynka).

C. Apple decides to open the iOS ecosystem to third-party developers

30. When Apple was developing the iPhone, Apple executives discussed whether to permit third parties to develop native apps, but ultimately deferred the issue until after the launch of the iPhone. Trial Tr. 2727:17–2728:4 (Schiller).
31. Following the release of the iPhone, there was interest from many developers in developing native apps for the iPhone. Trial Tr. 2729:11–24 (Schiller).
32. [OMITTED]
33. After Apple “shipped [the iPhone], developers started jailbreaking phones and writing native applications,” which Apple took “as an indication of their passion to build applications, native applications, for the iPhone.” Epic Ex. Depo. 4 at 86:1–5 (Forstall). Jailbreaking refers to a process that modifies Apple’s iOS operating system to enable the installation of unauthorized software, including applications from other interfaces. Ex. Expert 11 ¶ 76 (Rubin). By jailbreaking one’s device, a user can install apps that are not approved by any app review process (like sideloading, a different method for app installation that can bypass app stores and operating system vendors). *Id.*
34. The prevalence of jailbreaking created concerns for Apple. Trial Tr. 2729:25–2730:14 (Schiller). It has been well documented that jailbroken iOS devices suffer from more malware than non-jailbroken iOS devices. Ex. Expert 11 ¶ 76 (Rubin). Jailbroken phones pose severe security risks regarding malicious apps, data exposure, etc. for mobile devices. *Id.* Malware like this can be distributed via unreviewed apps that are only downloadable on jailbroken iPhones and, furthermore, the malware can use elevated privilege levels to perform malicious activity. *Id.*
35. Despite being provided with warnings, consumers continued to jailbreak phones and release new jailbreaking methods. These first-hand experiences with jailbreaking led some Apple executives to believe that Apple should be creating a platform and both enable and encourage developers to build native apps for the phones. Trial Tr. 2729:11–2730:17 (Schiller).
36. In response to input from developers about their desire to develop native iOS apps, Apple revisited the issue and decided to create the ability for third parties to develop native iOS apps. Trial Tr. 2728:24–2729:24 (Schiller).
37. In developing the ability for third-party native apps to be distributed on the iPhone, Apple emphasized two foundational objectives. Trial Tr. 2734:19–2735:2 (Schiller). The first was to protect the reliability of the device. Trial Tr. 2735:1–2, 2738:18–24 (Schiller). The second was to provide device security and protect users from malicious software. Trial Tr. 2734:21–2735:1 (Schiller).
38. Accordingly, on October 17, 2007, Apple announced that it would create and license a software development kit (“SDK”) for third-party developers. DX-4566; Trial Tr. 2731:4–10 (Schiller).

39. In the open letter announcing that Apple would release an iOS SDK, Apple explained:

It will take until February to release an SDK because we're trying to do two diametrically opposed things at once—provide an advanced and open platform to developers while at the same time protect iPhone users from viruses, malware, privacy attacks, etc. This is no easy task. Some claim that viruses and malware are not a problem on mobile phones—this is simply not true. There have been serious viruses on other mobile phones already, including some that silently spread from phone to phone over the cell network. As our phones become more powerful, these malicious programs will become more dangerous. And since the iPhone is the most advanced phone ever, it will be a highly visible target.

Some companies are already taking action. Nokia, for example, is not allowing any applications to be loaded onto some of their newest phones unless they have a digital signature that can be traced back to a known developer. While this makes such a phone less than “totally open,” we believe it is a step in the right direction. We are working on an advanced system which will offer developers broad access to natively program the iPhone’s amazing software platform while at the same time protecting users from malicious programs.

We think a few months of patience now will be rewarded by many years of great third party applications running on safe and reliable iPhones.

DX-4566.001. Those few months of patience were and continue to be rewarded billions of times over across the next many years.

D. Apple spends months creating an SDK for developers that permits access to Apple’s valuable intellectual property

40. iOS is proprietary to Apple, and only available on Apple devices. Trial Tr. 2723:18–2724:5 (Schiller). In order to enable third parties to build apps for iOS, Apple had to take affirmative steps to build tools, kits, and interfaces that would allow third parties to develop software that works on Apple’s proprietary operating system. Trial Tr. 2722:24–2732:24 (Schiller).
41. To do this, Apple invested substantial resources in creating a state-of-the-art SDK for developers so that they could use Apple’s intellectual property in order to develop software that runs on iOS. Trial Tr. 2722:24–2732:24 (Schiller).
- 41.1 “The attention to detail for the SDK [was] unbelievable,” and Apple “worked tirelessly literally going through single API calls for 10 iterations to make sure every single one is perfect.” PX-0880.031; Trial Tr. 2732:17–24 (Schiller).
- 41.2 The term “APIs” refers to application programming interfaces. Trial Tr. 669:14–20 (Grant); Trial Tr. 1101:5–8 (Kosmynka). An API is a command that you can make to a platformer operating system to ask it to perform a task, such as playing

an audio file. Trial Tr. 669:14–20 (Grant). APIs like Metal, Spatial Audio, or Core ML are technical tools that simplify and accelerate the development process of apps. Trial Tr. 3240:20–3241:4 (Schmid).

- 41.3 Apple has long protected its SDK, its APIs, its documentation, and the other tools necessary for building software that runs on iOS with patents, copyrights, and other intellectual property rights. Ex. Expert 12 ¶ 23 (Malackowski); *see also infra* § V.
42. The first SDK was released on March 6, 2008. PX-0880.022. The release of the SDK meant that third-party developers could build native iPhone applications using the same SDK as Apple. PX-0880.008.
43. As described further below, developers would be able to use APIs that offered features like location awareness functionality, media applications, and video playback. PX-0880.009. Apple said at the time: “[T]here are a lot of pieces that make up an SDK but the most important piece is the set of APIs, it’s the platform. That suits [Apple] well because Apple is a platform company.” PX-0880.008.
44. In addition to including frameworks and APIs, Apple made available “a comprehensive set of tools to help developers quickly build, debug and optimize their applications.” PX-0880.010. These included Xcode, Project Management, Interface Builder, Next Instruments as well as the iPhone Simulator. PX-0880.010–.011. As discussed further below, many of these tools, like iOS itself, are protected by patents, copyrights, and trademarks. *See infra* § V.
45. At launch, Apple emphasized that the SDK would be a “fantastic platform for creating games” to be released on the App Store. PX-0880.020. For example, Apple touted the built-in accelerometer. PX-0880.009–.010. An EA Mobile representative explained how the accelerometer allowed for motion-based game play features and could be used in conjunction with touch-screen capability to create new types of mobile games. PX-0880.014–.015.

E. Apple describes the mechanics and business terms of the App Store

46. After unveiling the SDK details at the product launch, Apple described its vision for a curated App Store. PX-0880.020.
 - 46.1 Apple indicated that it had solved app distribution for every developer, “big to small,” through the “App Store,” an application written to deliver apps to the iPhone and that would be preinstalled on the iPhone. PX-0880.020; Trial Tr. 2737:9–24 (Schiller).
 - 46.2 Apple explained: “So you are a developer and you’ve just spent two weeks or maybe a little bit longer writing this amazing app and what is your dream? Your dream is to get it in front of every iPhone user and hopefully they love it and buy it, right? That’s not possible today. Most developers don’t have those kinds of resources. Even the big developers would have a hard time getting their app in front of every iPhone user. Well, we are going to solve that problem for every

developer, big to small, and the way we are going to do it is what we call the ‘App Store.’ This is an application we’ve written to deliver apps to the iPhone and we are going to put it on every single iPhone with the next release of the software. And so our developers are going to be able to reach every iPhone user through the App Store. This is the way we are going to distribute apps to the iPhone.” PX-0880.020; *see also* DX-3055.001 (“We created the App Store with two goals in mind: that it be a safe and trusted place for customers to discover and download apps, and a great business opportunity for all developers.”).

47. Software updates would be made available to consumers immediately, for free. PX-0880.021–.022. And the App Store was designed to automatically tell consumers when there are software updates available and if they want the update they “tap the Update button and [the] app will be replaced by the updated version . . . over the air, all automatically.” PX-0880.021.
48. The core App Store business terms—many of which remain in place today—were outlined during the SDK launch. PX-0880.
 - 48.1 In order to gain access to more advanced APIs, beta software, and additional services, including those needed to distribute through the App Store, developers were required to join the Developer Program. PX-0880.022; Trial Tr. 2760:22–2761:14 (Schiller). When announced, the terms of this program, including the \$99 annual fee, were greeted with enthusiasm by developers. PX-0880.022.
 - 48.2 Apple decided that “the developer picks the price” for apps. PX-0880.021; *see also* Trial Tr. 403:7–15 (Simon) (developer testifying as to freedom for setting prices on web version of app).
 - 48.3 Apple supported free pricing from the outset. Apple recognized even before the App Store opened that a lot of developers would pick the price of “free.” PX-0880.021. “So when a developer wants to distribute their app for free, there is no charge for free apps at all.” *Id.* “There’s no charge to the user and there’s no charge to the developer.” *Id.* That includes apps that monetize through an advertising model; no matter how much ad revenue a developer earns, they pay Apple nothing. Trial Tr. 2093:10–11 (Hitt); Trial Tr. 2768:1–14 (Schiller). To both Apple and the developers’ benefit, this business model was designed “to get as many apps out in front of as many iPhone users as possible.” PX-0880.021; *see also* Trial Tr. 2740:23–2741:17 (Schiller) (describing Apple’s attempt to support variety of developers by permitting free apps).
 - 48.4 The App Store was thus designed to serve “two big important classes” of developers: The “free” developer, who wants to distribute apps for free, and those who want to charge for their apps. PX-0880.027; Trial Tr. 2740:23–2741:17 (Schiller). For the latter group, Apple had proven to developers “what a great revenue model it [could] drive in iTunes.” PX-0880.028. But at the same time, free apps often generate revenue for developers through various monetization

models like the use of in-app advertising, none of which went to Apple, Trial Tr. 2768:1–14 (Schiller). “We love free apps,” Steve Jobs said. PX-2060.005.

- 48.5 When Apple sells the app through the App Store “the developer gets 70% of the revenue[]”—“[t]here are no credit card fees for the developer,” “[t]here are no hosting fees,” “[t]here’s no marketing fees.” PX-0880.021.
- 48.6 As Mr. Jobs said, “[t]his [was] the best deal going to distribute applications to mobile platforms.” PX-0880.021. As discussed in more detail below, the commercial terms were significantly more favorable for distributors than prior models. *See infra* VI.
- 48.7 Apple envisioned the App Store as “the exclusive way to distribute iPhone applications directly to every iPhone user.” PX-0880.021. And it announced that some apps would be off limits—porn, malicious apps, “unforeseen” apps, apps that invaded one’s privacy, illegal apps, and even “bandwidth hog[s]”:



DX-4287 at 1:07:50–1:08:09; PX-0880.021; Trial Tr. 2749:7–20 (Schiller).

49. Thus, Apple also explained that there would be limitations placed on apps distributed through the App Store. Trial Tr. 2749:7–20 (Schiller).
- 49.1 Contrary to the assertions by Epic’s counsel in opening statements, Trial Tr. 13:19–14:1 (Opening Statement), there is no evidence of any “plan” by Apple executives to lure developers into the App Store on false pretenses and then later change the terms or conditions, and Apple witnesses denied any such “plan.” *See, e.g.*, Trial Tr. 923:19–924:7 (Fischer); Trial Tr. 2754:1–2 (Schiller). Nor has Epic introduced evidence that *any* developers knew of and relied on early statements by Apple executives that the App Store was not going to make a profit (or surpass \$1 billion

in annual revenue) in deciding to offer their apps on the App Store. Although Epic’s counsel sought to portray these statements as “promises,” there is no evidence to that effect.

49.2 The documents introduced by Epic throughout its case—mostly in its cross-examination of Mr. Schiller—fall well short of establishing any sort of “plan” to violate the antitrust laws.

49.2.1 The document cited by Epic in support of such a “plan,” PX-0882, simply involves a discussion among Apple decisionmakers about the fact that Apple was not going to allow Yahoo to incorporate its software APIs as part of the “software stack” on the iPhone, as doing so would be directly contrary to the “plan” that Apple had developed “[t]o have an SDK and an App Store and to review all apps and make sure it was all safe and secure.” Trial Tr. 2752:24–2753:25 (Schiller). Likewise, the document cited by Epic discussing a potential cutoff at \$1 billion in annual profit was in the context of *competition*—Mr. Schiller posed the idea as a way to “stay competitive,” not as an inducement to developers. PX-0417.1.

49.2.2 In its cross-examination of Mr. Schiller, Epic showed what it referred to as the “ultimate plan”—a document from December 2019 discussing the possibility of Apple adding features to eliminate user-entered passwords for the express purpose of protecting users from phishing scams. Trial Tr. 2987:9–2989:4 (Schiller). But as Mr. Schiller testified, “[i]f there’s any plan here, it’s simply to come up with new features to help protect users from security and privacy scams.” Trial Tr. 3170:16–20 (Schiller). The document (from 2019) certainly does nothing to advance Epic’s narrative that the App Store was designed with the intent to lure developers in with a false promise of future reductions in commission.

49.2.3 Also in cross examination of Mr. Schiller, Epic showed a document from 2008 discussing a prior “debate about app distribution,” PX-0879, but that document was not, as Epic suggested, whether to open up app distribution to all third parties, but only about opening up app distribution for education classes. Trial Tr. 2973:14–2974:17 (Schiller).

49.2.4 Counsel for Epic also cross-examined Mr. Schiller regarding a document from 2008 in which Mr. Jobs stated, “I think it would be a really bad idea for something that looks like contacts to have contacts not on that iPhone and could lead to people not using our contacts app at all. We may want to limit this in the license.” PX-0890. As Mr. Schiller explained, this conversation arose from the fact that Google was going to be adding a contacts app, and “[i]t was the first time we were met with the thought that you wend up with two contact apps in your phone, maybe one from Apple that was built into your phone and one from Google, and that when you went into one contact app, you might

not see the contacts from the other, and that would be really a bad user experience.” Trial Tr. 3179:11–3180:13 (Schiller). Ultimately, however, Apple “let it go,” and there is “no license limitation” on contact apps. Trial Tr. 3180:14–17 (Schiller).

50. Apple also indicated during the SDK launch that it was working to develop a model that would allow enterprises to securely deliver applications just to their end-users in a very protected way. PX-0880.002–.003, .006–.007.

F. In 2009, Apple launches the integrated IAP option for developers to monetize their apps

51. When the App Store first opened, the only time a consumer might pay for an app was at the time the user downloaded the app. Trial Tr. 2740:23–2741:17 (Schiller). An app either (a) was free initially and forever free or (b) required an up-front payment with no additional charges. Trial Tr. 2740:23–2741:17 (Schiller). In other words, there was no option for in-app purchases or upgrades. Trial Tr. 2769:23–2770:1 (Schiller).
52. Developers seeking to monetize their apps other than through the initial purchase sought the ability to sell digital content and features within apps. Trial Tr. 2770:2–14, 2787:11–8 (Schiller); DX-4192.003. As Scott Forstall explained at the time:

[D]evelopers have come to us saying there are other business models they’d love to support for their applications. For instance, subscriptions. There are publishers out there, things like magazines. They would love to have a magazine application right on the store where you can renew that subscription inside the application. There are game developers who would love to add additional levels and be able to sell game levels right from within the game. And there’s a lot of other new content that developers like to sell inside an application. For instance, an e-book. Today you have to sell one application per book. There are e-book developers who would love to sell a generic e-book application and have a bookstore built into the app. I’m happy to say that we are supporting all of these additional purchase models in iPhone 3.0 and we are doing it with what we call “in-app purchase.”

DX-4192.003.

53. In September 2009, Apple introduced in-app purchase (IAP) functionality, which had not previously been available. Trial Tr. 168:4–6 (Sweeney) (agreeing that “Apple first made in-app purchase available in 2009”); Trial Tr. 856:7–9 (Fischer); Trial Tr. 2769:23–2770:14 (Schiller) (describing Apple’s introduction of IAP as a response to developer feedback); Trial Tr. 3144:17–3145:5 (Schiller) (stating that IAP was added to Apple’s existing commerce engine in 2009). Although IAP originally was available only for purchasing in-app content in paid apps, DX-4192.004, Apple expanded IAP to free apps in within months. Trial Tr. 2790:15–2791:1; 3144:12–3145:5 (Schiller); DX-3463.002. Apple later expanded IAP to allow developers to offer recurring subscriptions in native

iOS apps, which was not previously available. Trial Tr. 2777:3–7, 2800:14–2082:1 (Schiller). Epic attempted to suggest that there were unauthorized in-app purchases prior to IAP, Trial Tr. 3128:16–3130:14 (Schiller), but the document cited only identified the technical possibility that developers might violate Apple’s guidelines, which have always required usage of Apple’s commerce engines for digital transactions, PX-0897; Trial Tr. 3129:16–3130:12 (Schiller).

- 53.1 During cross-examination, Mr. Schiller made clear that “[b]efore [Apple] officially launched subscriptions, [a user] could subscribe for content with in-app purchase but it was nonrecurring,” but that in 2011, in response to developer requests Apple created “a feature that was for recurring subscriptions . . . [that is] now automatically renewing which is what many developers like in a subscription program.” Trial Tr. 3097:15–24, 3183:5–17, 3184:2–25 (Schiller).
- 53.2 Mr. Schiller also made clear that in-app purchases “for digital goods and services consumed on iPhone” were not available to developers prior to Apple’s introduction of IAP in 2009. Trial Tr. 3195:2–11 (Schiller).
54. IAP was never intended to facilitate the sale of physical goods, Trial Tr. 957:3–23 (Fischer); rather, the goal of IAP “was to make it easier for developers to sell digital goods” on iOS, through the App Store. Apple Ex. Depo 9 at 252:21–253:11 (Forstall). Apple made clear to developers that its standard commission would apply to such sales. Trial Tr. 2790:5–14 (Schiller).
55. IAP is a commerce functionality integrated within iOS. Trial Tr. 956:13–14 (Fischer); Trial Tr. 2794:8–14 (Schiller). As Mr. Fischer described it, “IAP, as part of the commerce engine, enables the safe and frictionless delivery of digital goods from a developer to an end user. IAP is part of the commerce engine. It helps unlock features to improve the user experience like apps to buy” Trial Tr. 956:18–22 (Fischer). The IAP system conducts fraud-related checks. Trial Tr. 2797:3–19 (Schiller). These synchronized functions facilitate simultaneous transactions in which digital goods are delivered, payment is transferred, and Apple’s commission is collected. Trial Tr. 956:18–957:5 (Fischer).
56. IAP is the App Store’s secure and centralized system used to record sales, manage payments to developers, and collect commissions from developers that utilize the App Store. Trial Tr. 955:24–956:1 (Fischer) (IAP “enables us to, as part of our process for recording sales, for managing payments to developers, and also to officially collect our commission”); Trial Tr. 2798:11–13 (Schiller).
57. Apple’s IAP system also provides or facilitates other user-friendly features. *See* Trial Tr. 1894:15–1895:1 (Schmalensee). Because of IAP, users can view their purchase histories, manage their purchases, cancel their subscriptions, and use parental controls, among other things. Trial Tr. 3187:1–16 (Schiller).
58. IAP provided benefits to Apple, developers, and users alike. Epic Ex. Depo. 4 at 252:16–254:10 (Forstall).

59. Apple did not sell or charge developers to use IAP. Trial Tr. 2795:2–6, 2798:22–23 (Schiller). Instead, the IAP system created an efficient mechanism through which digital transactions would be effected and the company could collect its commission. Trial Tr. 2798:11–12 (Schiller). Without IAP, Apple would have enormous difficulty in identifying and collecting the commissions to which it is entitled. Trial Tr. 3863:18–3864:2 (Cook). Apple also benefitted because IAP made the platform more attractive to both developers and users. Ex. Expert 8 ¶¶ 149–54 (Schmalensee).
60. For developers, IAP opened up new monetization options for both developers and consumers. Ex. Expert 8 ¶ 134 (Schmalensee). For example, it provided developers the ability to sell new content and features in a simple and secure process. *Id.*
61. IAP also reduced frictions. Trial Tr. 3911:12–18 (Cook). IAP was a “huge win for the developer” because it provided an easy mechanism to “sell goods inside the app” and made it “much easier for developers to have another revenue stream.” Epic Ex. Depo. 4 at 252:16–254:10 (Forstall).
62. IAP also unlocked the “freemium” model (among others) whereby developers could release apps for free and charge customers within the app for extra content. Trial Tr. 2791:11–18 (Schiller); Ex. Expert 8 ¶ 134 (Schmalensee). This model became particularly popular, allowing developers to dramatically increase the revenue they generated on the App Store. DX-3734.030.
63. From the inception of IAP, IAP has always been a tool in the developer’s tool kit to facilitate in-app transactions, and not a separate product. Trial Tr. 2795:2–2796:3 (Schiller); *see also infra* § IV.C & XXIV.
 - 63.1 There is no additional fee to the developers for including IAP within their apps. Trial Tr. 3863:12–17 (Cook). IAP is also not a payment processor. Trial Tr. 3863:9–11 (Cook). Epic likewise does not consider its 12% commission a payment processing fee, but rather considers it a fee for access to the Fortnite audience. Trial Tr. 1271:7–1272:4 (Allison).

IV. Privacy, Security, Device Integrity, and Overall Customer Experience

- A. **In opening up the iPhone to third-party applications, Apple sought to protect consumers and prioritize their experience**
 64. Apple explained that in creating the App Store it took steps to make sure the applications “are going to be secure and don’t violate user privacy” and that this was a big concern. PX-0880.025. As Apple’s current Head of App Review, Trystan Kosmynka, testified, Apple “want[s] to make sure that the App Store is a great place for customers to find safe and trusted apps and a great opportunity for all developers. That’s the entire mission.” Trial Tr. 1085:1–12 (Kosmynka). Apple provides consumers choices by offering differentiated products, including from Android and game consoles, based on privacy, security, and quality. Trial Tr. 3932:21–3933:6, 3937:12–20, 3987:18–25 (Cook).

- 64.1 Epic’s security expert Dr. Mickens agreed that Apple and other major software companies “have a strong security culture.” Trial Tr. 2649:1–8 (Mickens). When asked how Apple compares to its peers, Dr. Mickens testified that he could not identify any companies in the world that “definitely do it better” than Apple. Trial Tr. 2708:15–17 (Mickens). And a 2013 book on which Dr. Mickens relied stated, “In actuality, however, Apple’s application security is light years, if not parsecs ahead of its peers.” Trial Tr. 2641:20–22, 2643:14–16, 2643:22–2644:7 (Mickens).
- 64.2 In response to a question from the Court, Dr. Mickens testified that iOS and Android are “roughly equivalent” in terms of security. Trial Tr. 2559:23–2560:8 (Mickens). This testimony is not credible in light of his later admission that no company does security better than Apple in the industry, Trial Tr. 2708:13–17 (Mickens), or the objective evidence showing a substantially higher incidence of malware on Android devices, DX-4975.008.
65. Apple “tried to strike a really good path”: “On one side you’ve got a closed device like the iPod, which always works. You pick it up, it always works because you don’t have to worry about third party apps mucking it up. And on the other side you’ve got a Windows PC where people spend a lot of time every day just getting it back up to where it’s usable and we want to take the best of both. We want to take the reliability and dependability of that iPod and we want to take the ability to run third party apps from the PC world but without the malicious applications.” PX-0880.025.
66. Ensuring the stability of the device was also of critical importance to Apple. Trial Tr. 2721:21–2723:16 (Schiller). The iPhone is a phone first and foremost. Trial Tr. 2722:13–2723:5 (Schiller). When consumers buy an iPhone, it should always be able to make and receive phone calls. *Id.*
67. [OMITTED]
- B. To achieve these goals, iOS architecture intentionally diverged from the macOS architecture in material ways**
68. Apple recognized that an iPhone was different than both Macs and iPods—it was a new device with a new set of demands and challenges. Trial Tr. 2721:21–2722:9 (Schiller). All technology carries with it “some element of risk.” Trial Tr. 2992:5–6 (Schiller). But as Epic’s security expert testified, while all operating system designers “have to assume the worst,” the security concerns of mobile devices versus desktops are “like apples and oranges.” Trial Tr. 2668:7–15, 2663:2–7 (Mickens). Unlike a Mac or iPod, the iPhone was a phone that individuals would carry around and need to use as a phone. Trial Tr. 2722:13–2723:5 (Schiller); Trial Tr. 3849:21–10 (Cook). The iPhone would also contain highly sensitive personal information—often more sensitive than that stored on a typical computer. Trial Tr. 3362:20–3363:7 (Federighi); Ex. Expert 11 ¶ 71 (Rubin). This includes financial information, mobile keys, and physical location information. Trial Tr. 3363:3–7 (Federighi); Trial Tr. 3806:23–3807:1 (Rubin). The iPhone therefore had to be more secure and more reliable than PCs were at the time. Trial Tr. 2735:1–2 (Schiller).

- 68.1 Apple is not alone in recognizing that different platforms can warrant different treatment. The Microsoft Xbox does not allow competing app stores, competing streaming services, and third party payment systems, while Windows does. Trial Tr. 628:10–630:1 (Wright); DX 5518.
69. Security concerns were particularly salient when the iPhone was launched. Trial Tr. 2723:8–16 (Schiller). And presently, iOS presents a different threat model than macOS for multiple reasons: (1) there are more than ten times more iPhones than Macs, creating a large attractive market for attacks, Trial Tr. 3362:2–5, 3363:16–17 (Federighi); (2) iPhone users are significantly “more prone to download apps by far than typical, let’s say, Mac or PC users,” thus providing “an attacker . . . potentially lots of opportunities to convince someone [to download a malicious app,” Trial Tr. 3362:6–19, 3363:24–3364:13 (Federighi); (3) “iPhones are very attractive target [because they] are very personal devices that are with you all of the time,” which contain highly sensitive personal information thus making “access or control of these devices potentially incredibly valuable to an attacker,” Trial Tr. 3362:20–3363:7, 3364:18–3365:1 (Federighi); and (4) Mac users are on average more sophisticated and thus given more latitude with the use of their device as opposed to iOS users, who can be children using an iPad before they can even read or an older audience with little experience with a computer, Trial Tr. 3393:14–25, 3507:4–8 (Federighi). Accordingly, “iOS devices are a more attractive, high value target.” Trial Tr. 3365:2–3 (Federighi).
70. Apple therefore viewed the development of iOS as an opportunity to improve on the operating system for its Macintosh line of personal computers, what became known as macOS. Trial Tr. 3358:22–3359:13 (Federighi) (“we recognized [that the development of iOS] was a kind of once-in-a-generation opportunity to take what we learned in security and really build a system for the next generation.”). As a result, the iOS architecture was informed by 40 years of experience with macOS in the desktop and laptop environment but improved and altered aspects of the macOS architecture to protect the iPhone and consumers. Trial Tr. 3358:22–3359:13 (Federighi). The iOS architecture also was designed with some of the constraints of mobile devices in mind, including more limited processing power and storage space relative to personal computers. Trial Tr. 2721:21–2722:9 (Schiller).
71. [OMITTED]
72. Apple made certain design decisions for iOS that differed from macOS. Apple’s approach to security on the iPhone is one of multiple layers which “in aggregate, create difficulty and economic disincentive,” for attackers “[b]ecause at any given time, one of those layers could be temporarily circumvented, and so you want to have another layer and another layer. Trial Tr. 3372:10–18 (Federighi); *see also* Trial Tr. 3401:18–24 (Federighi) (providing an example of malware that made it past the notarization server defense), Trial Tr. 3502:22–3503:15 (Federighi) (“If you were to take the kind of human review process that goes into the App Store and subit it to the kind of volume, the multiplier, that we see on the notarization service, the human cost would be tremendous and we wouldn’t be able to achieve the kinds of latencies that macOS developers, for instance, expect from the notarization service.”). Significantly for the purposes of this case, iOS contained technical

restrictions to deter the installation of software from external third-party sources—what has since become known as sideloading—even though, in light of entrenched consumer and developer expectations, one could do so on macOS. Trial Tr. 3388:24–3389:12 (Federighi); Trial Tr. 3393:4–13 (Federighi) (“The Mac from the beginning has been part of a generation of systems where the expectation is you can get software from wherever . . . That’s part of the expectation.”). Because there was even more personal and other information implicating privacy and safety concerns on iPhones than on PCs, such as health or location information, and because iPhone users will carry the phone around with them and expect it to work on demand, Apple wanted to ensure that iOS devices were more protected from those malware and instability issues and quality issues that the PC world was used to. Trial Tr. 2723:8–16, 2734:7–2735:2 (Schiller).

- 72.1 Apple also was aware that new threats would emerge for the iPhone: Steve Jobs projected in 2007 that “As our phones become more powerful, these malicious programs will become more dangerous, and since the iPhone is the most advanced phone ever, it will be a highly visible target.” DX-4566; Trial Tr. 2735:3–8 (Schiller).
73. “Sideloading” for iOS would create unacceptable vulnerabilities from Apple’s perspective.
 - 73.1 Opening the platform would have risked exposing it to viruses and malware, and Apple’s “security approach” for the first iPhone “was not to enable native compiled third party apps to install and run on the iPhone.” Apple Ex. Depo. 9 at 66:4–10 (Forstall); DX-4564.001. Epic’s experts talked generally about the possibility of App Review continuing for third-party app stores, but that is not possible for sideloaded apps. Trial Tr. 3417:8–3418:1 (Federighi). And even if App Review could reach all of these individual transactions, the App Store would become a “toxic mess.” Trial Tr. 3884:19–3885:11 (Cook).
 - 73.2 Apple had discussions about the risk to users of downloading software outside of the App Store, and was aware that malware on other devices was far in excess of that on iOS. Trial Tr. 2727:17–2728:17 (Schiller). That knowledge informed how Apple designed the App Store. *See id.*
 - 73.3 Every document introduced by Epic at trial to show when malware, fraud, or dangerous apps slipped through App Review through the years are the very types of apps that, if sideloading or third-party app stores such as itch.io were permitted on iOS, would then be distributed to iOS users. PX-0063 (Chinese money laundering apps); PX-0146 (Jekyl app); PX-0174 (scam app elevated to Tim Cook); PX-2173 (XcodeGhost); PX-0364.003 (complaint about developers in Asia submitting scam apps).
74. Apple also built into iOS several features that improved security, reliability and stability for the device and consumer prior to introducing the App Store. *See* PX-0880.026 (“Technically we are putting a number of different things in place from sandboxing to other technical things you want to do to protect applications and the system. . . .”).

- 74.1 One feature was app code signing, which requires the code for every iOS app to be signed with a certificate granted to the developer by Apple. Trial Tr. 3373:11–22 (Federighi); Ex. Expert 11 ¶ 64 (Rubin). This prevents untrusted apps, which could be potentially malicious, from running on an iOS device. Trial Tr. 3373:23–3374:2 (Federighi); Ex. Expert 11 ¶ 64 (Rubin). This contrasts with systems such as Android, which do not require certificates to be obtained from a principal authority. Ex. Expert 11 ¶ 64 (Rubin).
- 74.2 Another feature was sandboxing. Trial Tr. 3375:23–25 (Federighi); Ex. Expert 11 ¶¶ 31, 74 (Rubin). Sandboxing isolates third-party apps from critical system resources on the device as well as from other apps. Trial Tr. 3375:10–22 (Federighi); Ex. Expert 11 ¶ 31 (Rubin). This prevents a third-party app from making changes to the device and from accessing files stored by other apps unless granted permission by the user. Trial Tr. 3375:10–22, 3379:23–3380:2 (Federighi); Ex. Expert 11 ¶ 31 (Rubin).
- 74.3 Apple also restricted developers’ access to “private” APIs—APIs that are “not intended for third-party developer” use.” Trial Tr. 993:14–19, 993:14–19; 1101:9–14 (Kosmynka) (it’s “a violation of the app review guidelines for app to use private APIs”; “Q. And to whom is [the API] private? A. To Apple.”). Developer access to private APIs is restricted because such APIs may not be suitable in terms of stability, quality, reliability for users or developers. Trial Tr. 1103:25–1104:12 (Kosmynka); *see also* Ex. Expert 11 ¶ 109 (Rubin).
- 74.4 Apple also built entitlements—controls on which operating system resources may be accessed by apps or other software—into iOS. Trial Tr. 1102:9–17 (Kosmynka) (“[A]n entitlement gives an app a particular permission to a set of resources of APIs on the – on the device on the user’s device.”); *see also* DX-4162. Each app is granted a particular set of entitlements that govern its access rights. Trial Tr. 1102:9–17 (Kosmynka); Trial Tr. 3386:13–19 (Federighi); Ex. Expert 11 ¶ 110 (Rubin). In general, Apple does not permit an app to utilize entitlements that are not connected to the purpose of the app (e.g., a sketching program that does not need access to the contact list and a calculator does not need access to health information). Trial Tr. 1102:18–1103:24 (Kosmynka); Trial Tr. 3386:20–24 (Federighi); Ex. Expert 11 ¶ 111 (Rubin). Apple’s App Review process accordingly reviews the entitlements requested for an app in order to determine whether they are reasonable or whether they may betray a malicious or generally negative ulterior motive. Trial Tr. 3386:20–3387:4 (Federighi); Trial Tr. 1102:18–1103:24 (Kosmynka) (“[S]o in the case of HealthKit, this is a concern because if the entitlement is present in an app that is conceptually likely not doing good things with HealthKit, this could be a signal to us that there’s potential abuse in the future. We wouldn’t want to open our customers up to that, and so we would say you need to drop the entitlement”); Ex. Expert 11 ¶ 111 (Rubin). Apple’s process of reviewing entitlement requests can entail communication with Apple’s reviewers. Trial Tr. 1102:18–1103:24 (Kosmynka) (entitlement issues reviewed “in the human review phase as well”).

- 74.5 An app that requests unnecessary entitlements could be performing malicious behavior. Trial Tr. 1102:18–1103:24 (Kosmynka); Ex. Expert 11 ¶ 31 (Rubin). For example, a calculator app that requests access to the health information or contacts could have an ulterior motive. Trial Tr. 3386:20–3387:4 (Federighi); *see also* Ex. Expert 11 ¶ 37 (Rubin). Apple’s extra scrutiny of the entitlements afforded to an app provides a critical additional layer of security and protection for iOS device users, both by preventing apps with malicious and/or hidden motives from becoming available to users for download and installation on their devices as well as, once on the device, limiting their access to the previously identified entitlements. Trial Tr. 1102:18–1103:24 (Kosmynka); Ex. Expert 11 ¶ 71 (Rubin). This extra scrutiny has resulted in iOS device users facing fewer security risks than Android-based device users, whose Android devices typically allow apps to define their own permissions for accessing and sharing resources and capabilities with other apps and thus could access privileged functionality without alerting their users. Ex. Expert 11 ¶ 114 (Rubin); *see also* Trial Tr. 3761:12–3762:16 (Rubin) (describing a high-profile malware attack on Android that iOS’s entitlement requirements would prevent).
- 74.6 These security measures are made possible by centralized distribution, which “refers to having a single point of enforcement and a single location that the operating system is required to go in order to get software [which] is critical to ensuring that the user is getting the software from a reliable source.” Trial Tr. 3388:19–23 (Federighi); Trial Tr. 3501:10–18 (Federighi) (“I have a very strong view that centralized distribution and app review are critical to the safety of our users.”). Without centralized distribution, “[n]o human review could be enforced, because if software could be signed by people and downloaded directly . . . you could put an unsafe app up and no one would have checked [for compliance with Apple’s policies].” Trial Tr. 3388:24–3389:12 (Federighi); *see also* Trial Tr. 3744:23–3745:3 (Rubin) (describing the centralized distribution model as “the best for security”). While Epic argues that users worried about malware from third-party stores could simply not download apps from such stores, a user may nonetheless be drawn to downloading apps from unregulated third-party stores because “if the user needs that app [from the third-party store] for their job, for school, . . . to be in the right social group with their friends, whatever it is, they may have no choice but to go get it from the only place it is available, which may not be the App Store. Trial Tr. 3417:22–3418:1 (Federighi).
75. Many of these features were originally unique to iOS and had not existed in Apple’s macOS. Trial Tr. 3358:22–3359:1, 3389:14–3390:23 (Federighi) (“With iOS, we’ve aspired to create something far more secure. All indications are that we have succeeded in doing so. We certainly don’t want to slide back to the level of security that we are constrained to do with a Mac-like product or something like Android.”).
- 75.1 Mr. Federighi testified about the differences in security measures between the Mac and iPhone. In response to the Court’s question “why should we not allow the same stores [that exist on Mac] to exist on the phone?” Mr. Federighi responded: “[Having multiple stores] is how it is done on the Mac, and it is regularly exploited

on the Mac. iOS has established a dramatically higher bar for customer protection. The Mac is not meeting that bar today, and that's despite the fact that Mac users inherently download less software and are subject to a way less economically motivated attacker base. If you took Mac security techniques and applied them to the iOS ecosystem, with all those devices, all that value, it would get run over to a degree dramatically worse than is already happening on the Mac. And as I say, today we have a level of malware on Mac that we don't find acceptable, and it is much worse than iOS. Put that same situation in place for iOS and it would be a very, very bad situation for our customers. Trial Tr. 3389:14–3390:8 (Federighi); *see also* 3450:4–8 (Federighi) (noting that “signing alone would not block all malware”).

75.2 Mr. Federighi testified that “[i]f Apple were to institute just the Gatekeeper and the notarization policies on the iOS,” that “would be a significant downgrade” in terms of the level of security offered to users. Trial Tr. 3505:9–13 (Federighi).

C. Apple built IAP on principles of efficiency, reliability, security, and privacy

76. IAP reduced friction in in-app purchases and made them more efficient for developers and consumers. Epic Ex. Depo. 4 at 252:16–254:10 (Forstall); *see also* Ex. Expert 12 ¶ 24 (Malackowski).
77. As described above, IAP facilitates the delivery of digital content from developer to user in a seamless, reliable manner. *See supra* § III.F.
78. In doing so, IAP provides an efficient, “frictionless” payment experience for consumers. Trial Tr. 955:14–16 (Fischer); Trial Tr. 3911:12–18 (Cook).
79. [OMITTED]
80. [OMITTED]
81. IAP also provides important security benefits. Ex. Expert 8 ¶ 150 (Schmalensee); Ex. Expert 11 ¶ 125 (Rubin). For example, Apple's IAP stores all payment details in a tamper-resistant Hardware Security Module—a secure repository on a server that not even Apple employees can access. Ex. Expert 11 ¶ 126 (Rubin). Apple also provides cryptographically signed attestations—a mechanism that allows a program to authenticate the software being run—which provides developers with an assurance that customers are not cheating their app by sharing devices among multiple users. *Id.*
82. Apple also has built architecture to handle receipt handling and verification securely, which can be used to verify whether a purchase receipt is authentic, providing developers with assurance in the integrity of their transactions. Ex. Expert 11 ¶ 126 (Rubin); Epic Ex. Depo 12 at 20:24–21:14 (Gray). Apple checks that a developer server has confirmed receipt and that the customer has in fact purchased the content before it is delivered to the customer, helping the maintain the integrity and traceability of the transaction and confirm the developer's receipt of the transaction. Ex. Expert 11 ¶ 128 (Rubin).

83. And these are but a few of the security features Apple has developed for IAP. As one more example, IAP assists Apple in detecting on-device behavioral anomalies, which indicate “firmly” fraud (i.e., fraud initiated by the customer). Epic Ex. Depo. 12 at 142:2–14 (Gray).
84. Moreover, the specific details of IAP’s internal APIs may not be available to or used by third parties—ensuring that Apple’s proprietary security mechanisms are not exposed to the general public. Ex. Expert 11 ¶ 127 (Rubin).
85. In addition, IAP fraud protection is enhanced by the very fact that it is a centralized system for the entire iOS ecosystem. Ex. Expert 11 ¶ 128 (Rubin). That is because fraud detection techniques become more effective as more data points become available, Ex. Expert 11 ¶ 85 (Rubin), and, by centralizing all purchases of digital goods and services, IAP has a large number of data points to analyze and continuously improve the efficacy of its algorithms, *id.*
86. Such robust protections are important in light of the various types of payment fraud that consumers might commit. Trial Tr. 3187:1–16 (Schiller). A “balkanization” of in-app payment systems would limit the amount of data that Apple could aggregate and analyze, which in turn would compromise the fraud algorithms that Apple has developed. Ex. Expert 11 ¶¶ 128–29 (Rubin).
87. IAP also provides important privacy benefits. Trial Tr. 1894:15–1895:1 (Schmalensee). Breach of a third-party payment system would potentially expose private data, including financial information and personally identifiable information (“PII”), to attackers. Ex. Expert 11 ¶ 127 (Rubin). Using IAP, Apple can apply its advanced and tested security protections to ensure that its customers’ private information is safeguarded. Ex. Expert 11 ¶ 127 (Rubin). IAP also avoids the need for each developer to take and store a user’s financial information. Trial Tr. 1894:15–1895:1 (Schmalensee).

V. Apple’s Valuable Intellectual Property Is At the Heart of iOS App Development and Distribution

88. Innovation is the cornerstone of Apple’s business and the company prides itself on the commitment to inventing products and services unlike anything on the market. Trial Tr. 3845:10–21 (Cook); *see* Ex. Expert 12 ¶ 25 (Malackowski). Apple’s intellectual property is of enormous significance to the company. Some third party analyses estimate that it comprises over 60% of Apple’s business enterprise value. Ex. Expert 12 ¶ 25 (Malackowski). And it is intimately connected to the substantial R&D investments Apple has made. Trial Tr. 3619:2–14 (Malackowski).
89. The iOS ecosystem, including the App Store, is made possible by, and comprised of, Apple’s intellectual property, and without the use of that intellectual property, it would not be possible to build an app for iOS. Trial Tr. 2732:6–8, 2758:25–2759:3, 2932:9–2933:21 (Schiller); Trial Tr. 405:9–406:15 (Simon); DX-4080.001 (“Apple’s innovation is embodied in its Intellectual Property.”).

- 89.1 Apple has invested substantially in protecting its intellectual property rights in its iOS ecosystem. Ex. Expert 12 ¶ 23 (Malackowski); *see also* Trial Tr. 3615:14–21 (Malackowski) (describing Apple’s “significant and sustained commitment towards innovation”). Apple holds approximately 1,237 U.S. patents, and an additional 559 patent applications, related to iOS. *Id.* Apple also holds 165 U.S. patents and 91 U.S. patent applications related to the App Store. *Id.* Apple holds hundreds of U.S. patents and patent applications related to app distribution and development, including comprehensive app developer tools, frameworks and related services directed towards the infrastructure of iOS apps and their use of data and web content, advanced user interactions and features, in-app purchase functionality, and security and privacy innovations that are designed into iOS and iPhone hardware and software. *Id.*
- 89.2 Apple also protects its original content with copyright protection, holding hundreds of iOS-specific copyrights. Trial Tr. 2932:10–15 (Schiller); Trial Tr. 3630:5–9 (Malackowski); Ex. Expert 12 ¶ 23 (Malackowski). And it also has secured trademark protection related to the App Store and several software tools used by app developers. Trial Tr. 3630:5–9 (Malackowski); Ex. Expert 12 ¶ 23 (Malackowski); DX-3229.
- 89.3 Apple has provided app developers, including Epic, access to many aspects of its intellectual property for distributing apps and conducting in-app purchases. Trial Tr. 2732:6–8 (Schiller); Ex. Expert 12 ¶ 40 (Malackowski). For example, Epic has used Apple’s software tools and APIs. Trial Tr. 671:15–16, 677:6–23, 685:5–11, 745:6–8, 745:16–19, 746:4–6 (Grant); *see also* DX-3691.015–.017.
- 89.4 Apple vigorously protects and enforces its intellectual property. It has filed multiple patent, copyright, and trademark lawsuits around the world. Ex. Expert 12 ¶ 18 (Malackowski). It has provided testimony to the Copyright Office about its commitment to protecting its copyrights. *Id.* And it has invested in trade secret litigation against employees who leaked confidential Apple information. *Id.*
90. Unlike many other large companies, such as Google or Microsoft, Apple does not license iOS to original equipment manufacturers. Trial Tr. 2723:17–2724:5 (Schiller); Ex. Expert 12 ¶ 19 (Malackowski). iOS is only available on devices made by Apple. Trial Tr. 2723:17–2724:5 (Schiller); Ex. Expert 12 ¶ 19 (Malackowski). It is not sold or made available separately. Trial Tr. 2723:17–19 (Schiller).
91. Apple has chosen to reserve and exercise its right to exclusively use some of its other intellectual property for the design and production of its own products. Ex. Expert 12 ¶ 19 (Malackowski). As Epic’s employees concede, developers, including Epic, have no right to use Apple’s proprietary software, tools, or services without being granted those rights pursuant to a license agreement. Apple Ex. Depo. 5 at 46:15–23, 25 (Penwarden).
92. At the same time, Apple has chosen to allow use of certain intellectual property (including access to iOS itself) pursuant to license agreements. Trial Tr. 2758:17–2759:3 (Schiller). As Mr. Sweeney has acknowledged, while developers can license Apple’s intellectual

property, those licenses carry certain “limitations and restrictions on what” developers like “Epic can do with Apple’s intellectual property.” Trial Tr. 167:15–20 (Sweeney).

VI. In Exchange For Using Apple’s Intellectual Property To Develop And Distribute Apps Through The App Store, Developers Must Abide By The Terms Of Apple’s License Agreements

A. To develop apps for iOS, developers agree to abide by the terms of the Developer Agreement

93. Today, “[t]here are many ways to monetize [an] app on the App Store,” PX-2790.9, and Apple facilitates a variety of business models for developers, Trial Tr. 925:24–926:1 (Fischer). As Apple has explained to developers, there are at least five business models developers can use to make money on their apps: the free, freemium, subscription, paid, and paymium models. DX-4614. Under the “paid model,” (also called the “download and install” model), for instance, a developer may charge a price for the user to download the app. Trial Tr. 2773:23–2774:5 (Schiller); *see* Trial Tr. 2858:11–22 (Schiller). A developer may instead choose the “freemium model,” allowing users to download an app for free but permitting in-app purchases—the primary model Epic uses for *Fortnite*. Trial Tr. 2791:11–18, 3094:11–22 (Schiller). Or a developer can offer subscriptions to users (for sale in the app, through a different platform, or online); can sell users digital currencies that can be used in the app (for sale in the app, through a different platform, or online); can sell advertisements in the app; or can charge for in-app promotions and events. Trial Tr. 2768:1–8, 2779:12–21, 3100:9–22 (Schiller).
94. No matter the business model a developer wants to use, the first step for developing an app using Apple’s intellectual property is agreeing to the Apple Developer Agreement. Trial Tr. 2756:24–2757:3; PX-2618.002. The terms of this agreement are standardized and not negotiated. Trial Tr. 2757:4–8 (Schiller); Trial Tr. 414:8–17 (Simon) (developer did not find his inability to negotiate the agreement’s terms to be objectionable). A developer cannot enter into any other agreement with Apple, such as the Developer Program License Agreement, until it first executes the Developer Agreement and remains a party to the Developer Agreement. Trial Tr. 2757:1–16, 2760:22–2761:14 (Schiller) (describing Developer Agreement as “for anyone who wants to start developing with [Apple’s] tools and software” and a precursor to the tools made available through the DPLA).
95. The Developer Agreement governs certain foundational elements of the relationship between Apple and a developer, such as confidentiality and protection of Apple’s intellectual property rights. Trial Tr. 2757:9–16; PX-2618.002.
96. By signing the agreement, developers gain access to certain proprietary app development tools that Apple designed to help developers learn how to develop apps for Apple platforms for free. Trial Tr. 2757:9–16 (Schiller). This includes Xcode, an integrated development environment that assists developers in designing, developing, and debugging software for macOS, iOS, iPadOS, watchOS, and tvOS. Trial Tr. 405:24–406:13 (Simon); Trial Tr. 674:19–75:7 (Grant); Trial Tr. 2757:9–16 (Schiller); Ex. Expert 12 ¶ 44 (Malackowski).

97. The agreement also provides that developers “may have the opportunity to attend certain Apple developer conferences, technical talks, and other events.” PX-2618.002. Similarly, developers “may have access to Apple’s software and/or hardware compatibility testing and development labs and/or developer technical support incidents.” PX-2618.004 (internal parenthetical omitted).
98. Developers pay nothing to Apple for access to these tools and services. Trial Tr. 2758:3–8 (Schiller). They do, however, agree to abide by certain restrictions in using Apple’s intellectual property. PX-2618.002. As set forth in Section 3 of the Developer Agreement:

You agree not to exploit the Site, or any Services, Apple Events or Content provided to you by Apple as an Apple Developer, in any unauthorized way, including but not limited to, by trespass, burdening network capacity or using the Services, Site or Content other than for authorized purposes. Copyright and other intellectual property laws protect the Site and Content provided to you, and you agree to abide by and maintain all notices, license information, and restrictions contained therein. Unless expressly permitted herein or otherwise permitted in a separate agreement with Apple, you may not modify, publish, network, rent, lease, loan, transmit, sell, participate in the transfer or sale of, reproduce, create derivative works based on, redistribute, perform, display, or in any way exploit any of the Site, Content or Services. You may not decompile, reverse engineer, disassemble, or attempt to derive the source code of any software or security components of the Services, Site, or Content (except as and only to the extent any foregoing restriction is prohibited by applicable law or to the extent as may be permitted by any licensing terms accompanying the foregoing). Use of the Site, Content or Services to violate, tamper with, or circumvent the security of any computer network, software, passwords, encryption codes, technological protection measures, or to otherwise engage in any kind of illegal activity, or to enable others to do so, is expressly prohibited. Apple retains ownership of all its rights in the Site, Content, Apple Events and Services, and except as expressly set forth herein, no other rights or licenses are granted or to be implied under any Apple intellectual property.

Id.

99. Under the Developer Agreement, “Apple may change, suspend or discontinue providing the Services, Site and Content to you at any time, and may impose limits on certain features and materials offered or restrict your access to parts or all of such materials without notice or liability.” PX-2618.002 (Section 2). Apple also “may terminate or suspend [a developer] as a registered Apple Developer at any time in Apple’s sole discretion,” and, if it does so, Apple also “reserves the right to deny your reapplication at any time in Apple’s sole discretion.” PX-2618.005 (Section 10). By the same token, a developer “may terminate your participation as a registered Apple Developer at any time, for any reason, by notifying Apple in writing of your intent to do so.” *Id.* “Upon any termination or, at Apple’s discretion, suspension, all rights and licenses granted to you by Apple will cease, including your right to access the Site, and you agree to destroy any and all Apple Confidential Information that is in your possession or control.” *Id.*

100. There are over 30 million registered iOS developers who have agreed to abide by the Developer Agreement. Trial Tr. 2759:9–17 (Schiller).

B. To distribute native iOS apps developed using Apple’s intellectual property, developers must sign the Developer Program License Agreement

101. To distribute apps using Apple Software, developers must sign the Developer Program License Agreement (“DPLA”) and pay a \$99 annual fee. Trial Tr. 2759:22–2760:9, 2761:21–25 (Schiller); PX-2619. The DPLA is a “portfolio license,” licensing a portfolio of intellectual property related to iOS for use by developers. Trial Tr. 3701:1–14 (Malackowski); *see also* Trial Tr. 3642:10–15 (Malackowski) (the DPLA “requires that apps that use this intellectual property to be put on the platform have to go through app review and then be distributed only through the platform”).

102. The DPLA’s terms are standardized and not negotiated. Trial Tr. 2760:16–21 (Schiller). It is ordinary for firms licensing their intellectual property to multiple third parties to use standardized terms. *See* Trial Tr. 414:8–17 (Simon).

103. The DPLA states: “*You would like to use the Apple Software (as defined below) to develop one or more Applications (as defined below) for Apple-branded products. Apple is willing to grant You a limited license to use the Apple Software and Services provided to You under this Program to develop and test Your Applications on the terms and conditions set forth in this Agreement.*” PX-2619.002 (emphasis added).

104. The benefits of signing the DPLA are significant. It allows developers to use Apple’s proprietary software “to develop one or more Applications for Apple-branded products.” PX-2619.002 (internal parenthetical omitted). And members of the Apple Developer Program gain access to “Apple Software” and “Apple Services”—a vast suite of software and services (over which Apple still retains all legal “rights, title and interest”). PX-2619.003–.004, .012.

104.1 In addition to using Apple’s Xcode, Apple Developer Program members may access Apple’s proprietary software for advanced app development. PX-2619.010; Trial Tr. 2759:22–2760:9 (Schiller). First and foremost, this includes Apple’s SDK, a suite of development tools that Apple improves upon with each new iOS version. Trial Tr. 673:22–674:11 (Grant) (testifying that “more recent versions of the Apple SDKs” allow developers to “[tick] a box and have an application that will work on both iOS and macOS”).

104.2 Developers also gain access to many other powerful, proprietary tools. Trial Tr. 2760:22–2761:14 (Schiller). These currently include Metal Developer Tools, Reality Composer 1.5 beta, Apple Configurator 2.13 beta, Schoolwork 2.1 beta. PX-2619.003–.004. They also include over 150,000 APIs, such as TestFlight. Trial Tr. 2760:22–14, 2894:21–22 (Schiller); Trial Tr. 406:14–407:11 (Simon). Indeed, Apple has provided access to its intellectual property, including approximately 150,000 iOS APIs and other app developer tools. Ex. Expert 12 ¶ 20

(Malackowski); *infra* § XI.B–D (detailing the multitude of benefits Epic has received from Apple during the course of their relationship).

- 104.3 Another benefit to the developer program is access to beta or pre-release versions of iOS and other Apple software. Trial Tr. 2760:22–2761:14 (Schiller); Ex. Expert 12 ¶ 41 (Malackowski).
- 104.4 Apple also offers many services to members of the developer program. Trial Tr. 2764:5–2767:4 (Schiller). It gives free business and technical reviews to registered developers, for example. Trial Tr. 2766:22–2767:4 (Schiller). Apple also assists developers in deciding whether and which international markets to enter. DX-3513.042.
- 104.5 Developers also can join the vibrant developer community Apple has built around events like WWDC, which costs Apple more than \$50 million each year—a cost not allocated to the App Store. Trial Tr. 2765:22–2766:3 (Schiller). Apple invites certain developers to showcase their products—an opportunity given to Epic on multiple occasions. Trial Tr. 747:11–748:1 (Grant); Apple Ex. Depo. 6 at 49:16–21 (Rein); Apple Ex. Depo. 5 at 121:12–123:4 (Penwarden). Epic has also benefited from opportunities to consult with Apple’s “great” engineers. Trial Tr. 732:23–733:14 (Grant).
105. Signing the DPLA is a necessary prerequisite to distributing apps through (1) the App Store; (2) on a limited basis through certain specialty storefronts (called “Custom App Distribution”); (3) on a limited basis for use on registered devices (called “ad hoc” distribution); or (4) for beta testing through TestFlight. PX-2619.002, .005, .016, .037. (Apple’s Developer Enterprise Program is a separate mechanism through which certain companies can develop and distribute apps for their employees,. Trial Tr. 911:23–912:3 (Fischer); PX-2519.)
106. In exchange for access to Apple’s intellectual property, developers agree in the DPLA to abide by several commitments, which have been tailored over time. Trial Tr. 2759:22–2760:9 (Schiller); *see also* Trial Tr. 167:10–23 (Sweeney).
 - 106.1 In Section 3.1 of the current DPLA, developers “certify to Apple and agree that,” among other things, they “will comply with the terms of and fulfill [their] obligations under this Agreement, including obtaining any required consents for [their] Authorized Developers’ use of the Apple Software and Services, and [developers] agree to monitor and be fully responsible for all such use by [their] Authorized Developers and their compliance with the terms of this Agreement.” PX-2619.015.
 - 106.2 In Section 3.2 of the DPLA, developers agree, among other things, that (1) they “will use the Apple Software and any services only for the purposes and in the manner expressly permitted by this Agreement and in accordance with all applicable laws and regulations,” (2) their “Application, Library and/or Pass will be developed in compliance with the Documentation and the Program

Requirements” set forth in Section 3.3 of the DPLA, (3) their app “do[es] not and will not violate, misappropriate, or infringe any Apple or third party copyrights, trademarks, rights of privacy and publicity, trade secrets, patents, or other proprietary or legal rights,” (4) they “will not, through use of the Apple Software, Apple Certificates, Apple Services or otherwise, create any Covered Product or other code or program that would disable, hack or otherwise interfere with the Security Solution, or any security, digital signing, digital rights management, verification or authentication mechanisms implemented in or by iOS, watchOS, iPadOS, tvOS, the Apple Software, or any Services, or other Apple software or technology, or enable others to do so (except to the extent expressly permitted by Apple in writing),” and (5) they “will not, directly or indirectly, commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple’s business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, Custom App Distribution, or the Program.” PX-2619.016..

- 106.3 Section 3.2 of the DPLA further states: “Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement.” PX-2619.016.
- 106.4 In Section 3.3 of the DPLA, developers agree that “[a]ny Application that will be submitted to the App Store . . . must be developed in compliance with the Documentation and the Program Requirements.” PX-2619.016. Among these requirements, sections 3.3.2 and 3.3.3 provide:

3.3.2 Except as set forth in the next paragraph, an Application may not download or install executable code. Interpreted code may be downloaded to an Application but only so long as such code: (a) does not change the primary purpose of the Application by providing features or functionality that are inconsistent with the intended and advertised purpose of the Application as submitted to the App Store, (b) does not create a store or storefront for other code or applications, and (c) does not bypass signing, sandbox, or other security features of the OS.

An Application that is a programming environment intended for use in learning how to program may download and run executable code so long as the following requirements are met: (i) no more than 80 percent of the Application’s viewing area or screen may be taken over with executable code, except as otherwise permitted in the Documentation, (ii) the Application must present a reasonably conspicuous indicator to the user within the Application to indicate that the user is in a programming environment, (iii) the Application must not create a store or storefront for other code or applications, and (iv) the source code provided by the Application must be completely viewable and editable by the user (e.g., no

pre-compiled libraries or frameworks may be included with the code downloaded).

3.3.3 Without Apple’s prior written approval or as permitted under **Section 3.3.25 (In-App Purchase API)**, an Application may not provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight.

PX-2619.017. As the DPLA explains, “**In-App Purchase API**’ means the Documented API that enables additional content, functionality or services to be delivered or made available for use within an Application with or without an additional fee.” PX-2619.006.

- 106.5 Finally, developers agree that “[a]ll use of the In-App Purchase API and related services must be in accordance with the terms of this Agreement (including the Program Requirements) and Attachment 2 (Additional Terms for Use of the In-App Purchase API).” PX-2619.021. Apple’s IAP APIs must be used only for certain in-app purchases (for example, it does not apply to purchases of physical goods). Trial Tr. 957:7–13 (Fischer); Trial Tr. 2768:15–2769:10 (Schiller); PX-2790.12 (§ 3.1.3(e)).
- 106.6 The terms of Attachment 2 specify that a developer “must submit to Apple for review and approval all content, functionality, or services that [the developer] plan[s] to provide through the use of the In-App Purchase API in accordance with these terms and the processes set forth in **Section 6 (Application Submission and Selection)** of the Agreement.” PX-2619.051. “For all submissions, [the developer] must provide the name, text description, price, unique identifier number, and other information that Apple reasonably requests.” *Id.* “If [a developer] would like to provide additional content, functionality or services through the In-App Purchase API that are not described in [the] Submission Description, then [the developer] must first submit a new or updated Submission Description for review and approval by Apple prior to making such items available through the use of the In-App Purchase API.” *Id.*
107. Section 6.1 of the DPLA governs the submission to Apple for distribution through the App Store. PX-2619.033. It provides:

You may submit Your Application for consideration by Apple for distribution via the App Store or Custom App Distribution once You decide that Your Application has been adequately tested and is complete. By submitting Your Application, You represent and warrant that Your Application complies with the Documentation and Program Requirements then in effect as well as with any additional guidelines that Apple may post on the Program web portal or in App Store Connect. You further agree that You will not attempt to hide, misrepresent or obscure any features, content, services or functionality in Your submitted Applications from Apple’s review or otherwise hinder Apple from being able to fully review such Applications. . . . You agree to cooperate with Apple in this submission process

and to answer questions and provide information and materials reasonably requested by Apple regarding Your submitted Application, including insurance information You may have relating to Your Application, the operation of Your business, or Your obligations under this Agreement. . . . If You make any changes to an Application (including to any functionality made available through use of the In-App Purchase API) after submission to Apple, You must resubmit the Application to Apple. Similarly all bug fixes, updates, upgrades, modifications, enhancements, supplements to, revisions, new releases and new versions of Your Application must be submitted to Apple for review in order for them to be considered for distribution via the App Store or Custom App Distribution, except as otherwise permitted by Apple.

Id.

108. Schedules appended to the DPLA outline additional terms specific to the distribution of apps on the App Store. *See* PX-2621. Distribution of paid apps or apps offering in-app purchases through the App Store requires execution of an additional Schedule 2 to the License Agreement. PX-2621.
109. Schedule 2 contains two key commitments.
 - 109.1 First, developers agree to pay Apple a commission on those in-app purchases. PX-2621.4–.5. The general rule is that “Apple shall be entitled to a commission equal to thirty percent (30%) of all prices payable by each End-User.” *Id.* “[F]or auto-renewing subscription purchases made by customers who have accrued greater than one year of paid subscription service,” however, “Apple shall be entitled to a commission equal to fifteen percent (15%) of all prices payable by each End-User for each subsequent renewal.” *Id.* The purpose of this commission is for Apple to a return on its investment in the App Store through a royalty on the licensing of its intellectual property. Trial Tr. 3864:3–5 (Cook). Epic licenses Unreal Engine, its intellectual property, for the same reason. Trial Tr. 753:19–754:19 (Grant).
 - 109.2 Second, developers acknowledge that any “violat[ion] [of] the terms of the Agreement, this Schedule 2, or other documentation including without limitation the App Review Guidelines” is grounds for Apple “to cease marketing, offering, and allowing download by End-Users of the Licensed Applications at any time, with or without cause, by providing notice of termination to You.” PX-2621.010.
110. The DPLA also contains an indemnity provision (§ 10). PX-2619.040. It states:

To the extent permitted by applicable law, You agree to indemnify and hold harmless, and upon Apple’s request, defend, Apple, its directors, officers, employees, independent contractors and agents (each an “Apple Indemnified Party”) from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys’ fees and court costs (collectively, “Losses”), incurred by an Apple Indemnified Party and arising from or related to any of the following (but excluding for purposes of this Section, any Application

for macOS that is distributed outside of the App Store and does not use any Apple Services or Certificates): (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement, including Schedule 2 and Schedule 3 (if applicable); (ii) any claims that Your Covered Product or the distribution, sale, offer for sale, use or importation of Your Covered Product (whether alone or as an essential part of a combination), Licensed Application Information, metadata, or Pass Information violate or infringe any third party intellectual property or proprietary rights; (iii) Your breach of any of Your obligations under the EULA (as defined in Schedule 1 or Schedule 2 or Schedule 3 (if applicable)) for Your Licensed Application; (iv) Apple's permitted use, promotion or delivery of Your Licensed Application, Licensed Application Information, Safari Push Notification, Safari Extension (if applicable), Pass, Pass Information, metadata, related trademarks and logos, or images and other materials that You provide to Apple under this Agreement, including Schedule 2 or Schedule 3 (if applicable); (v) any claims, including but not limited to any end-user claims, regarding Your Covered Products, Licensed Application Information, Pass Information, or related logos, trademarks, content or images; or (vi) Your use (including Your Authorized Developers' use) of the Apple Software or services, Your Licensed Application Information, Pass Information, metadata, Your Authorized Test Units, Your Registered Devices, Your Covered Products, or Your development and distribution of any of the foregoing.

You acknowledge that neither the Apple Software nor any Services are intended for use in the development of Covered Products in which errors or inaccuracies in the content, functionality, services, data or information provided by any of the foregoing or the failure of any of the foregoing, could lead to death, personal injury, or severe physical or environmental damage, and, to the extent permitted by law, You hereby agree to indemnify, defend and hold harmless each Apple Indemnified Party from any Losses incurred by such Apple Indemnified Party by reason of any such use.

In no event may You enter into any settlement or like agreement with a third party that affects Apple's rights or binds Apple in any way, without the prior written consent of Apple.

PX-2619.040.

C. To qualify for distribution through the App Store, iOS apps must comply with the App Store Review Guidelines

111. Apple seeks to create a unique ecosystem by offering a highly curated App Store where every app and every app update approved to the App Store is reviewed by Apple employees who are experts in app review. Trial Tr. 921:3–5 (Fischer); Trial Tr. 1082:16–1083:15; 1105:7–13 (Kosmyinka); PX-2790.1. Apps distributed through the App Store must comply with Apple's App Store Review Guidelines. See Trial Tr. 2835:13–15 (Schiller) (app developer must “submit [the app] for review and follow the guidelines”). This protects “[c]ustomer trust” in the App Store's “safe experience for users”—“the cornerstone of the

App Store’s success”—as well as maintains Apple’s standards for high-quality apps. PX-2790.1, .24. The Guidelines are applied equally to all developers. Trial Tr. 945:15–16 (Fischer). Although Apple sometimes refers to certain developers as being “white-listed,” that term refers only to beta tests for new apps. Trial Tr. 946:10–947:10 (Fischer).

112. The App Store Review Guidelines are not only detailed and wide reaching but also periodically updated and improved to address emerging issues and security threats. PX-2790.2; Trial Tr. 1084:15–25 (Kosmynka) (the App Store Review Guidelines “guide the entire review process”). As explained in the Guidelines: “When people install an app from the App Store, they want to feel confident that it’s safe to do so—that the app doesn’t contain upsetting or offensive content, won’t damage their device, and isn’t likely to cause physical harm from its use.” PX-2790.3. Because Apple believes “what’s on our store says a lot about who we are,” Apple “takes steps to make sure apps are respectful to users with differing opinions, and reject apps for any content or behavior that we believe is over the line – especially when it puts children at risk,” such as “pornographic material, discriminatory references, torture and abuse, or anything else in exceptionally poor taste.” DX-3055.001.
113. The Guidelines thus address safety, privacy, performance and reliability issues. DX-3055.001–.002. For example, the Guidelines address the provision of false information and features, defamatory, or mean-spirited content, and depictions that encourage illegal or reckless use of weapons and dangerous objects, as well as privacy and data security considerations. PX-2790.3. The Guidelines further cover performance and reliability issues, because “[c]ustomers should know what they’re getting when they download or buy [an] app.” PX-2790.5. According to the Guidelines, an “app’s functionality should be clear to end users and App Review” and should not “include any hidden, dormant, or undocumented features.” *Id.* The Guidelines are also intended to prevent apps from trying to use a business model that is unclear to users, constitute “clear rip-offs,” infringe upon another’s intellectual property, or violate other legal restrictions. PX-2790.9, .22. They are intended to ensure that the App Store “a safe experience for users to get apps and a great opportunity for all developers to be successful.” PX-2790.1.
114. Several provisions are dedicated to data security and privacy. PX-2790.5, .19–.21. Indeed, the Guidelines acknowledge that “[p]rotecting user privacy is paramount in the Apple ecosystem,” and developers “should use care when handling personal data to ensure [they have] complied with privacy best practices, applicable laws and the terms of the Apple Developer Program License Agreement, not to mention customer expectations.” PX-2790.19.
 - 114.1 To that end, Section 1.6 states that “[a]pps should implement appropriate security measures to ensure proper handling of user information collected pursuant to the Apple Developer Program License Agreement and these Guidelines (see Guideline 5.1 for more information) and prevent its unauthorized use, disclosure, or access by third parties.” PX-2790.5.
 - 114.2 Sections 5.1.1–5.1.3 set out specific policies with which apps must comply:

5.1.1 Data Collection and Storage

(i) **Privacy Policies:** All apps must include a link to their privacy policy in the App Store Connect metadata field and within the app in an easily accessible manner. The privacy policy must clearly and explicitly:

- Identify what data, if any, the app/service collects, how it collects that data, and all uses of that data.
- Confirm that any third party with whom an app shares user data (in compliance with these Guidelines) — such as analytics tools, advertising networks and third-party SDKs, as well as any parent, subsidiary or other related entities that will have access to user data — will provide the same or equal protection of user data as stated in the app’s privacy policy and required by these Guidelines.
- Explain its data retention/deletion policies and describe how a user can revoke consent and/or request deletion of the user’s data.

(ii) **Permission** Apps that collect user or usage data must secure user consent for the collection, even if such data is considered to be anonymous at the time of or immediately following collection. Paid functionality must not be dependent on or require a user to grant access to this data. Apps must also provide the customer with an easily accessible and understandable way to withdraw consent. Ensure your purpose strings clearly and completely describe your use of the data. Apps that collect data for a legitimate interest without consent by relying on the terms of the European Union’s General Data Protection Regulation (“GDPR”) or similar statute must comply with all terms of that law. Learn more about Requesting Permission.

(iii) **Data Minimization:** Apps should only request access to data relevant to the core functionality of the app and should only collect and use data that is required to accomplish the relevant task. Where possible, use the out-of-process picker or a share sheet rather than requesting full access to protected resources like Photos or Contacts.

(iv) **Access** Apps must respect the user’s permission settings and not attempt to manipulate, trick, or force people to consent to unnecessary data access. For example, apps that include the ability to post photos to a social network must not also require microphone access before allowing the user to upload photos. Where possible, provide alternative solutions for users who don’t grant consent. For example, if a user declines to share Location, offer the ability to manually enter an address.

(v) **Account Sign-In:** If your app doesn’t include significant account-based features, let people use it without a log-in. Apps may not require users to enter personal information to function, except when directly relevant to the core functionality of the app or required by law. If your core app functionality is not related to a specific social network (e.g. Facebook, WeChat, Weibo, Twitter, etc.), you must provide access without a login or

via another mechanism. Pulling basic profile information, sharing to the social network, or inviting friends to use the app are not considered core app functionality. The app must also include a mechanism to revoke social network credentials and disable data access between the app and social network from within the app. An app may not store credentials or tokens to social networks off of the device and may only use such credentials or tokens to directly connect to the social network from the app itself while the app is in use.

(vi) Developers that use their apps to surreptitiously discover passwords or other private data will be removed from the Developer Program.

(vii) SafariViewController must be used to visibly present information to users; the controller may not be hidden or obscured by other views or layers. Additionally, an app may not use SafariViewController to track users without their knowledge and consent.

(viii) Apps that compile personal information from any source that is not directly from the user or without the user's explicit consent, even public databases, are not permitted on the App Store.

(ix) Apps that provide services in highly-regulated fields (such as banking and financial services, healthcare, gambling, and air travel) or that require sensitive user information should be submitted by a legal entity that provides the services, and not by an individual developer.

5.1.2 Data Use and Sharing

(i) Unless otherwise permitted by law, you may not use, transmit, or share someone's personal data without first obtaining their permission. You must provide access to information about how and where the data will be used. Data collected from apps may only be shared with third parties to improve the app or serve advertising (in compliance with the Apple Developer Program License Agreement.). Apps that share user data without user consent or otherwise complying with data privacy laws may be removed from sale and may result in your removal from the Apple Developer Program.

(ii) Data collected for one purpose may not be repurposed without further consent unless otherwise explicitly permitted by law.

(iii) Apps should not attempt to surreptitiously build a user profile based on collected data and may not attempt, facilitate, or encourage others to identify anonymous users or reconstruct user profiles based on data collected from Apple-provided APIs or any data that you say has been collected in an "anonymized," "aggregated," or otherwise non-identifiable way.

(iv) Do not use information from Contacts, Photos, or other APIs that access user data to build a contact database for your own use or for sale/distribution to third parties, and don't collect information about which other apps are installed on a user's device for the purposes of analytics or advertising/marketing.

(v) Do not contact people using information collected via a user's Contacts or Photos, except at the explicit initiative of that user on an individualized basis; do not include a Select All option or default the selection of all contacts. You must provide the user with a clear description of how the message will appear to the recipient before sending it (e.g. What will the message say? Who will appear to be the sender?).

(vi) Data gathered from the HomeKit API, HealthKit, Consumer Health Records API, MovementDisorder APIs, ClassKit or from depth and/or facial mapping tools (e.g. ARKit, Camera APIs, or Photo APIs) may not be used for marketing, advertising or use-based data mining, including by third parties. Learn more about best practices for implementing CallKit, HealthKit, ClassKit, and ARKit.

(vii) Apps using Apple Pay may only share user data acquired via Apple Pay with third parties to facilitate or improve delivery of goods and services.

5.1.3 Health and Health Research

Health, fitness, and medical data are especially sensitive and apps in this space have some additional rules to make sure customer privacy is protected:

(i) Apps may not use or disclose to third parties data gathered in the health, fitness, and medical research context—including from the Clinical Health Records API, HealthKit API, Motion and Fitness, MovementDisorderAPIs, or health-related human subject research—for advertising, marketing, or other use-based data mining purposes other than improving health management, or for the purpose of health research, and then only with permission. Apps may, however, use a user's health or fitness data to provide a benefit directly to that user (such as a reduced insurance premium), provided that the app is submitted by the entity providing the benefit, and the data is not be shared with a third party. You must disclose the specific health data that you are collecting from the device.

(ii) Apps must not write false or inaccurate data into HealthKit or any other medical research or health management apps, and may not store personal health information in iCloud.

(iii) Apps conducting health-related human subject research must obtain consent from participants or, in the case of minors, their parent or guardian. Such consent must include the (a) nature, purpose, and duration of the research; (b) procedures, risks, and benefits to the participant; (c) information about confidentiality and handling of data (including any sharing with third parties); (d) a point of contact for participant questions; and (e) the withdrawal process.

(iv) Apps conducting health-related human subject research must secure approval from an independent ethics review board. Proof of such approval must be provided upon request.

PX-2790.19–.21.

114.3 Guideline 2.5 sets out additional software security requirements:

2.5 Software Requirements

2.5.1 Apps may only use public APIs and must run on the currently shipping OS. Learn more about public APIs. Keep your apps up-to-date and make sure you phase out any deprecated features, frameworks or technologies that will no longer be supported in future versions of an OS. Apps should use APIs and frameworks for their intended purposes and indicate that integration in their app description. For example, the HomeKit framework should provide home automation services; and HealthKit should be used for health and fitness purposes and integrate with the Health app.

2.5.2 Apps should be self-contained in their bundles, and may not read or write data outside the designated container area, nor may they download, install, or execute code which introduces or changes features or functionality of the app, including other apps. Educational apps designed to teach, develop, or allow students to test executable code may, in limited circumstances, download code provided that such code is not used for other purposes. Such apps must make the source code provided by the Application completely viewable and editable by the user.

2.5.3 Apps that transmit viruses, files, computer code, or programs that may harm or disrupt the normal operation of the operating system and/or hardware features, including Push Notifications and Game Center, will be rejected. Egregious violations and repeat behavior will result in removal from the Developer Program.

2.5.4 Multitasking apps may only use background services for their intended purposes: VoIP, audio playback, location, task completion, local notifications, etc. If your app uses location background mode, include a reminder that doing so may dramatically decrease battery life.

2.5.5 Apps must be fully functional on IPv6-only networks.

2.5.6 Apps that browse the web must use the appropriate WebKit framework and WebKit Javascript.

2.5.7 Video streaming content over a cellular network longer than 10 minutes must use HTTP Live Streaming and include a baseline 192 kbps HTTP Live stream.

2.5.8 Apps that create alternate desktop/home screen environments or simulate multi-app widget experiences will be rejected.

2.5.9 Apps that alter or disable the functions of standard switches, such as the Volume Up/Down and Ring/Silent switches, or other native user interface elements or behaviors will be rejected. For example, apps should not block links out to other apps or other features that users would expect to work a certain way. Learn more about proper handling of links.

2.5.10 Apps should not be submitted with empty ad banners or test advertisements.

2.5.11 SiriKit and Shortcuts

(i) Apps integrating SiriKit and Shortcuts should only sign up for intents they can handle without the support of an additional app and that users would expect from the stated functionality. For example, if your app is a meal planning app, you should not incorporate an intent to start a workout, even if the app shares integration with a fitness app.

(ii) Ensure that the vocabulary and phrases in your plist pertains to your app and the Siri functionality of the intents the app has registered for. Aliases must relate directly to your app or company name and should not be generic terms or include third-party app names or services.

(iii) Resolve the Siri request or Shortcut in the most direct way possible and do not insert ads or other marketing between the request and its fulfillment. Only request a disambiguation when required to complete the task (e.g. asking the user to specify a particular type of workout).

2.5.12 Apps using CallKit or including an SMS Fraud Extension should only block phone numbers that are confirmed spam. Apps that include call-, SMS-, and MMS- blocking functionality or spam identification must clearly identify these features in their marketing text and explain the criteria for their blocked and spam lists. You may not use the data accessed via these tools for any purpose not directly related to operating or improving your

app or extension (e.g. you may not use, share, or sell it for tracking purposes, creating user profiles, etc.).

2.5.13 Apps using facial recognition for account authentication must use Local Authentication (and not ARKit or other facial recognition technology) where possible, and must use an alternate authentication method for users under 13 years old.

2.5.14 Apps must request explicit user consent and provide a clear visual and/or audible indication when recording, logging, or otherwise making a record of user activity. This includes any use of the device camera, microphone, screen recordings, or other user inputs.

2.5.15 Apps that enable users to view and select files should include items from the Files app and the user's iCloud documents.

2.5.16 App Clips, widgets, extensions, and notifications should be related to the content and functionality of your app. Additionally, all App Clip features and functionality must be included in the main app binary. App Clips cannot contain advertising.

PX-2790.8–9.

115. In addition, the Guidelines explain that “[i]f you want to unlock features or functionality within your app, (by way of example: subscriptions, in-game currencies, game levels, access to premium content, or unlocking a full version), you must use in-app purchase. Apps may not use their own mechanisms to unlock content or functionality, such as license keys, augmented reality markers, QR codes, etc. Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than in-app purchase.” PX-2790.10 (§ 3.1.1). In other words, the App Store Review Guidelines require that digital goods and services sold in an app must use IAP. Trial Tr. 1094:18–1095:13 (Kosmynta); Trial Tr. 89:5–11 (Sweeney).
116. For developers who elect to distribute apps through the App Store, the Guidelines make clear that developers “are responsible for making sure everything in your app complies with these guidelines, including ad networks, analytics services, and third-party SDKs.” PX-2790.2.
117. The Guidelines warn, “[i]f you attempt to cheat the system (for example, by trying to trick the review process, steal user data, copy another developer's work, manipulate ratings or App Store discovery) your apps will be removed from the store and you will be expelled from the Developer Program.” PX-2790.1.

D. Apple conducts a robust app review before apps are published

118. Every app and every app update submitted for distribution on the App Store is reviewed pursuant to Apple's App Review process to ensure compliance with the App Store Review

Guidelines and DPLA, which require, among other things, that the app performs as expected and “doesn’t contain upsetting or offensive content, won’t damage [the user’s] device, and isn’t likely to cause physical harm from its use.” PX-2790.3; *see also* Trial Tr. 1085:1–1085:13 (Kosmynka). Apple has designed a rigorous App Review process, using proprietary review tools and information, in which it continues to invest and evolve in order to protect users and developers alike from fraud, malware, and unwarranted intrusion into their privacy, as well as to evaluate the operation and reliability of proposed apps and app updates. Trial Tr. 1036:6–12 (Kosmynka) (tools for App Review are developed at and proprietary to Apple), 1097:11–1098:25 (Kosmynka) (describing static and dynamic review tools such as DT App Analyzer, Apple Similarity, Z String, App Transparency). App Review is intended to benefit consumers and developers. Trial Tr. 1124:7–15 (Kosmynka).

118.1 If Apple did not have a rigorous App Review process, including the automated systems and people put in place by Apple to ensure that the App Store is a safe and trusted place to get apps, then it would be a “free-for-all.” Trial Tr. 1183:12–1184:6 (Kosmynka); *see also* Trial Tr. 2709:23–2710:2 (Mickens) (Epic’s security expert testifying that “absolute mayhem where anything goes” is one end of the security spectrum). This includes threats from “store within a store” apps that could create a safety issue for Apple’s users. Trial Tr. 1076:14–1077:3 (Kosmynka). The document relied on by Epic demonstrate that fraud issues exist worldwide, but vary and particularly concentrated in specific countries. PX-0197 (fraud issue in Latin America); PX-2190.002 (for new developer accounts, “Greater China is vastly different, with only 20% of new accounts being trusted); PX-0059.085 ([REDACTED]).

118.2 The threats from such a “free-for-all” are not theoretical, as illustrated by a third-party “store within a store” app called “itch.io” currently available for download on the Epic Games Store. Trial Tr. 1258:21–1259:22 (Allison). Currently, Epic does not appear to have any app review process in place to prevent third party app stores on EGS, such as itch.io, from offering sexually explicit or other pornographic sites for download. Trial Tr. 1257:5–7, 1258:4–7 (Allison). Mr. Allison testified that he was not aware of whether itch.io made a number of sexually explicit apps, including one called “Sisterly Lust,” available for download. Trial Tr. 1257:5–1258:7 (Allison).

118.2.1 When asked by the Court about whether Epic wanted to introduce an app like itch.io on the iPhone, Mr. Allison stated that he did not know “that we would want to do that.” Trial Tr. 1259:2–6 (Allison). When asked later if he planned to do anything upon learning more about the content of the itch.io app on EGS, Mr. Allison stated that he did not “have an answer for you.” Trial Tr. 1280:20–1281:22 (Allison).

118.2.2 Stores-within-a-store could pose particular problems for App Review. One of the things the App Review team analyzes is the binary for an app. Trial Tr. 1096:12–22 (Kosmynka). In addition to analyzing the binary, App Review actually executes the binary to see how it functions.

Trial Tr. 1096:23–1097:1 (Kosmynka). It is not clear, however, that Apple could perform such a test for apps distributed from third-party app stores hosted on the App Store, such as EGS or itch.io (which is itself distributed through EGS).

- 118.3 As described below, this type of inappropriate material would be rejected during Apple’s App Review process. This is contrary to the testimony of Steve Allison, Head of Epic Games Store, who could only promise the Court that he would have to “dig in” about the issue. Trial Tr. 1280:20–1281:22 (Allison).
- 118.4 These types of “store within a store” apps are different from apps such as Minecraft and Roblox. Although Roblox provides customers with the opportunity to make in-app purchases, Apple’s Executive Review Board (“ERB”) determined that Roblox does not enable users to “download additional features and functionality, but rather provides users with “experiences that . . . are bounded and unable to do things outside of what Roblox itself is capable of doing.” Trial Tr. 1075:22–1076:13 (Kosmynka). The experiences offered within Roblox are not themselves apps. Trial Tr. 2835:6–19 (Schiller).
- 118.5 These types of “store within a store” apps are also different than stores within stores that sell products *other than* “apps and games.” Trial Tr. 3115:25–3126:12 (Schiller). The App Store has many “stores within stores,” broadly defined—it has “bookstores,” “music stores,” “music stores,” “movie stores,” “physical goods stores,” and “cartoon bookstores and comic bookstores.” Trial Tr. 3116:2–6 (Schiller). The App Store simply does not permit other *app stores* to be distributed. Trial Tr. 3116:7–12 (Schiller).
119. Apple’s App Review process is multi-layered, combining computer automated and manual human review. Trial Tr. 992:13–15, 1095:23–1102:8 (Kosmynka) (“Apple’s app review process involves both human-led review and automated tools for review”). Every app and every app update approved to the App Store is reviewed by automated computer review and Apple employees who are experts in app review. Trial Tr. 993:2–13, 993:20–25, 9:03–09, 9:25; PX-2790.1. Apple’s proprietary review tools leverage machine learning, heuristics, and data accumulated since Apple first launched the App Store in order to quickly extract large volumes of information about an app’s potential issues and violations and present that information to a human reviewers. Trial Tr. 1095:23–1102:8 (Kosmynka) (“Both status and dynamic analysis work together to grab facts about the submission such that we can inform our tools and inform our reviewers.”). This facilitates the expedient and accurate review of apps. Trial Tr. 1113:3–1114:1 (Kosmynka) (“the purpose of Columbus was to heavily invest in app review automation and efficiency”; “it’s not just to make sure we review the app faster, it’s also to give [developers] the support they need as well. And improved consistency and quality.”). While Apple inevitably receives complaints from developers that the review process is slow, those complaints are infrequent. Trial Tr. 1002:15–21 (Kosmynka).
120. Recognizing that computer tools and algorithms depend upon their input data, Apple’s App Review process continuously incorporates and relies upon continuous updates of Apple’s

review tools, including by utilizing information learned through the review process. Apple relies on many proprietary tools and services for its robust App Review process. Trial Tr. 1095:23–1102:8; 1108:20–1109:11 (Kosmynka). One such tool is Mozart, which among other things is a datastore, search and rules system. Trial Tr. 1104:13–1105:2 (Kosmynka). Mozart stores and surfaces to more complex information gathered from static and dynamic analysis. Trial Tr. 1104:13–1105:2 (Kosmynka) (“facts that are gathered” from static and dynamic review are moved into Mozart). When a problematic issue is encountered with an app, the App Review team is able to codify and store the information regarding that issue into a rule in Mozart so that any submissions for any app submitted to review are checked for similar issues and the relevant information is surfaced to members of the App Review team. Trial Tr. 1104:13–1105:2; 1115:1–18 (Kosmynka) (“This was the rule engine that I discussed with [Mozart]. All of this would feed into a concept we call ‘assisted review.’ It is dependent on human beings, but we provide human beings with important information and facts such that they can make more accurate and more efficient decisions, and then overall tool efficiency was a heavy investment.”). The continual updating and training of Apple’s machine learning and other App Review tools with such updated information is critical to the continued effectiveness of Apple’s App Review Process. Trial Tr. 1108:20–1109:11 (Kosmynka); Ex. Expert 11 ¶¶ 41–42 (Rubin).

121. In combination with hundreds of human experts, Apple uses computer automated review that includes meta data and asset analysis, static analysis, and dynamic analysis. Trial Tr. 1095:23–1101:4; 1115:1–18 (Kosmynka). Static analysis consists of reviewing and analyzing the app and its binary code without executing it. Trial Tr. 1096:12–17 (Kosmynka). This is a first level approach to ferreting out impermissible aspects of software, such as the presence of links to malicious websites, pirated and/or cloned apps, and other known security concerns. Trial Tr. 1097:19–1098:13 (Kosmynka). For example, Apple’s Z Strings extracts URLs to identify malicious websites. Trial Tr. 1099:22–1100:8 (Kosmynka). During dynamic analysis, the proposed app or app update is executed so that its behavior may be analyzed, including to gain insights into its runtime signatures and operation and to assist in the discovery of potential violations of the Guidelines. Trial Tr. 1098:14–1099:8 (Kosmynka). These automated analyses contribute to the review process, aiding in the discovery of potential violations of the App Store Review Guidelines and finding otherwise undetectable threats and inauthentic patterns across apps and developers. Trial Tr. 1095:23–1101:4 (Kosmynka).
122. These automated processes are particularly useful for detecting certain security risks. Trial Tr. 1097:19–1098:13 (Kosmynka). For example, computers are reasonably effective at identifying malware, private API usage, and potentially pirated software because they can work off an enormous corpus of data associated with identified threats, including suspicious keywords, malicious IP addresses and URLs, and other data in order to check each app for known security and reliability threats and potential legal violations. Trial Tr. 1097:19–1098:13 (Kosmynka); Ex. Expert 11 ¶ 42 (Rubin). Consequently, when an app is submitted to App Review, Apple uses automated tools such as the DT App Analyzer (“DTAA”) in connection with scanning for the detection of potentially known malware and other suspicious behavior. Trial Tr. 1097:19–1098:1; 1101:15–1102:8 (Kosmynka). Many of these automated tools are run as part of a process called App Ingest, during which specialized Apple review tools such as Mozart will collect and identify to reviewers the

information about an app's potential issues or threats. Trial Tr. 1100:14–24; 1104:13–1105:6 (Kosmynka).

123. Apple's proprietary computer automated tools also analyze an app's code and function calls (including obfuscated function calls). Trial Tr. 1097:7–1098:25 (Kosmynka). Through, for example, Apple's "App Transparency" tool, an app's function calls (including obfuscated function calls) will be scanned in order to detect private API usage and other issues. Trial Tr. 1098:14–25 (Kosmynka) (App Transparency "in addition to statically analyzing the binary, it also is doing some dynamic analysis or forced execution, if you will, to resolve call paths so that we can get a better understanding of whether or not there is obfuscated API calls and they may be having hid methods or classes that would have otherwise statically been undetectable."). "There is hundreds of these examples where a developer has tried to capitalize on the name of 'Fornite,'" that were rejected by App Review. Trial Tr. 1089:25–1090:7 (Kosmynka).
 - 123.1 This review continues with a post app review which is important in detecting malicious apps. Through this process, Apple detects "incredibly malicious things" that developers implement after a benign app is approved. Trial Tr. 1088:23–1089:13 (Kosmynka).
124. Apple also uses automated processes to determine whether a submitted app calls private APIs. Trial Tr. 1101:15–1102:8 (Kosmynka) ("DT App Analyzer would inform us whether there was private APIs."). Identifying such apps is another instance which computers outperform humans: While it is difficult for humans to keep track of which of the thousands of APIs on the iOS platform are private and public, computers can do so accurately and efficiently. Ex. Expert 11 ¶ 109 (Rubin). And automatic review is also used to flag potentially pirated applications. Trial Tr. 1098:2–7 (Kosmynka) ("App Similarity will look at the machine language of the app and provide a signature, and that signature will be used as a way to find whether or not there are clones of this particular binary moving forward but also presently, and so that's a tool that helps us with copycat rejections."); Ex. Expert 11 ¶ 42 (Rubin).
125. Moreover, dynamic analysis involves "executing the code or running the app as if the operating system would run that app to understand and observe how it would act in real life," Trial Tr. 994:8–12 (Kosmynka), to protect against apps written with hidden behavior that will activate after App Store release as well as to detect whether significant changes have been made to apps since they were last reviewed, Trial Tr. 1099:1–21; 1120:18–23 (Kosmynka) (Mercury is an "automated tool" that "monitor[s] for problematic apps"). Apple's "Mercury infrastructure" runs dynamic analysis on iPads and iPhones in a data center with "custom cages built for such devices." Trial Tr. 1099:11–21 (Kosmynka). "[T]he Macs on the top are performing the orchestration in connecting to overall App Store infrastructure to drive this process. And these devices would be running 24/7 to, upon submission, exercise an app in an automated fashion." Trial Tr. 1099:11–21 (Kosmynka). There are "[o]ver 2,000" total devices involved in this process. Trial Tr. 1100:9–24 (Kosmynka).

126. Human review is the distinguishing component of Apple’s App Review process, and “from a competitive standpoint, the App Store is regarded as the safest and trusted app store.” Trial Tr. 1122:13–1123:6 (Kosmynka); Ex. Expert 11 ¶ 38 (Rubin); *see also* Trial Tr. 1123:17–24 (Kosmynka) (“I think there’s other companies that also have app stores, and the example we shared today of an app that is on their store[,] with human review, that app would not be on our store.”); DX-3199.003 (Mr. Sweeney publicly recognizing the value of human review). Every app and app update approved for distribution through the App Store is reviewed by Apple employees who are experts in app review. Trial Tr. 1082:4–1083:15; 1105:7–13 (Kosmynka) (“the next step would be human review”; “there is five - - around 500 human experts within App Review”).
- 126.1 The combination of human review with automated static and dynamic analysis using Apple’s proprietary tools for every app and app update uniquely differentiates Apple’s industry-leading process. Trial Tr. 1095:23–1102:8; 1122:13–1123:24 (Kosmynka); Trial Tr. 3739:23–3740:7 (Rubin) (describing malware delivered through app updates); Ex. Expert 11 ¶ 58 (Rubin). Indeed, Epic’s security expert could not identify any company in the world that “definitely do[es] [security] better in all cases” than Apple. Trial Tr. 2708:13–17 (Mickens). Manual human review helps Apple detect malicious or otherwise problematic behavior and ensure compliance with the Guidelines with a much higher degree of accuracy than an automated analysis alone. Trial Tr. 1098:8–13; 1085:19–1087:8 (Kosmynka) (“computer analysis alone [cannot] identify objectionable content” and rejected apps such as “[Pocket] Girls” that placed “women in what looked to be compromised positions and appears as though it was a rape scene” and “plastic surgery games marketed towards children”); Ex. Expert 11 ¶ 38 (Rubin). Apple’s extensive human review distinguishes the App Store among digital marketplaces; no other digital marketplace offers as comprehensive a human review process. Trial Tr. 2583:8–10, 2609:3–5 (Mickens) (Epic’s security expert testifying that human review is “difficult to scale” and disclaiming the argument that “there’s no value to human review”); Ex. Expert 11 ¶ 38 (Rubin). Apple’s human reviewers also go through a six-week “apprenticeship model” training program, Trial Tr. 1080:19–1081:12 (Kosmynka), and go through training with iOS updates to coordinate apps with updates, Trial Tr. 1122:13–1123:9 (Kosmynka).
127. Human review is an early line of defense against new and emerging threats to the iOS platform. Ex. Expert 11 ¶ 40 (Rubin).
128. While automation is valuable at collecting information relating to potential threats, as well as detecting known threats through pattern recognition, automated processes are far less capable of detecting new issues and threats. Trial Tr. 1095:23–1102:8; 1107:4–1108:19 (Kosmynka); Ex. Expert 11 ¶ 37 (Rubin). These processes rely upon, but are fundamentally limited by, their use of heuristics. Trial Tr. 1093:22–1094:1; 1107:4–21 (Kosmynka); Ex. Expert 11 ¶ 40 (Rubin). Heuristics are well-suited for performing repetitive analysis and detecting already-known malicious or otherwise problematic behavior. Ex. Expert 11 ¶ 40 (Rubin). However, because heuristics rely upon humans to develop them, they are less able to detect new types of issues and attacks not seen before. *Id.* Automation relying upon heuristics also typically face challenges when attempting to

detect omission-related issues, including detecting security issues in heavily obfuscated code or binaries as well as violations of content guidelines by user-generated content. Trial Tr. 1095:23–1102:8; 1107:1–21 (Kosmynka); Ex. Expert 11 ¶ 37 (Rubin). Automated processes alone are also less able to detect hidden, dormant, or undocumented features—prohibited by the App Store Review Guidelines. Trial Tr. 1088:19–1089:13 (Kosmynka) (“it’s hard for us . . . to find it, so we’ll often have to find this post review. But we’re here today because of an example of a hidden, dormant, undocumented feature . . .”); Ex. Expert 11 ¶ 40 (Rubin).

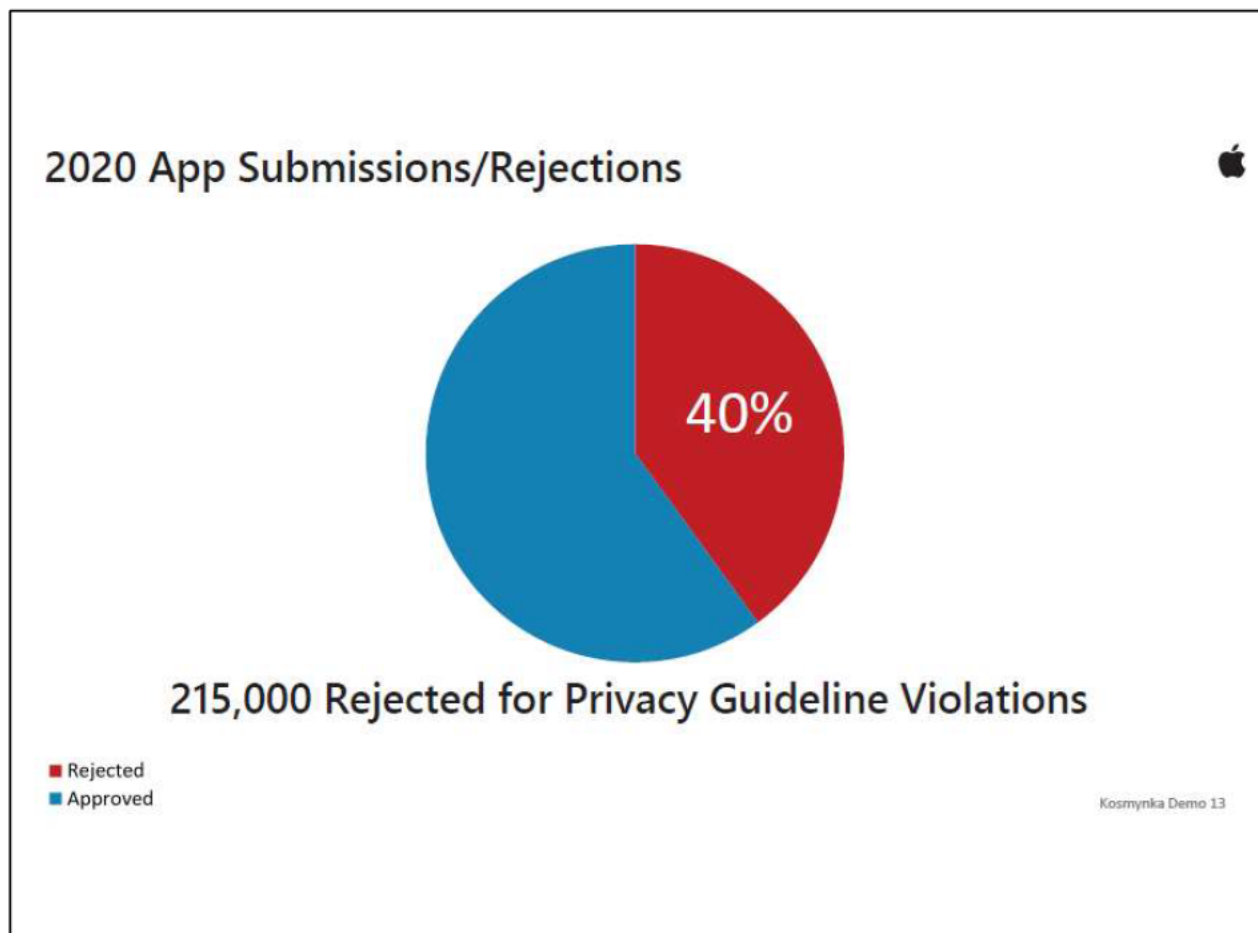
128.1 Automated review also cannot always identify apps that contain content in violation of Apple’s guidelines for children. Trial Tr. 1086:14–1087:8 (Kosmynka). Likewise, human review can be necessary to detect privacy issues in submitted apps. Trial Tr. 1093:22–1094:1 (Kosmynka).

128.2 App Review also screens apps for violations of App Review guidelines prohibiting nudity and pornography. Trial Tr. 3152:20–3153:5 (Schiller). In determining whether content is or is not pornography, Mr. Schiller acknowledged that it is “a very difficult topic to be black and white on” but that Apple sets “conditions for review” concerning “the display of genitalia” and the “context of which the images are” displayed in the app, including “definitions around titillation” to help reviewers make that determination. Trial Tr. 3154:13–24 (Schiller). Nudity is, however, allowed if the context is “for medical apps or appropriate education apps.” Trial Tr. 3154:7–10 (Schiller). Regardless of the app titles and terms read to Mr. Schiller by Epic’s counsel, the Guidelines, when applied properly, prohibit nudity in most circumstances. Trial Tr. 3155:9–19 (Schiller).

129. By contrast, human reviewers, using the information collected by the automated tools, can more effectively identify new or previously unknown types of user-unfriendly behavior, hidden or undocumented features, and other potential guideline violations, as well as their impact upon safety, security, privacy, and reliability. Trial Tr. 1107:1–21 (Kosmynka) (“there are new threats that are detected during human review”); Trial Tr. 3485:2–10 (Federighi) (agreeing that human reviewers enforce privacy); Ex. Expert 11 ¶ 37 (Rubin). Certain determinations can only be made by a human. Ex. Expert 11 ¶ 39 (Rubin). For example, a human reviewer is better positioned to determine whether a list of entitlements requested for an app is reasonable or whether it betrays a malicious or generally negative ulterior motive. By way of example, a human reviewer is better positioned to confirm that a Tic-Tac-Toe app’s request for access to the camera betrays an ulterior motive. Ex. Expert 11 ¶ 39 (Rubin). Human reviewers also are better positioned to assess whether user-generated content flagged by automated tools for review is offensive, violates restrictions on content in apps for children, constitutes false or misleading content, or seeks information in violation of privacy guidelines. Trial Tr. 1085:13–1086:10 (Kosmynka) (Pocket Girls); Trial Tr. 3156:16–3161:11 (Schiller) (discussing guidelines concerning prohibitions on user generated adult content for Tik Tok, Instagram and Reddit through apps distributed through the App Store); Ex. Expert 11 ¶ 37 (Rubin). By way of further example, human reviewers were able to identify “the Blue Whale Campaign in which there was something trending on social media encouraging folks to commit suicide, and . . . the team was aware of this and proactively used tools and human review to find blue whale apps . . .” Trial

- Tr. 1107:4–21 (Kosmynka). Human reviewers can also detect pornography or illegal gambling apps. Trial Tr. 1108:20–1109:11 (Kosmynka). They also are better able to identify social engineering attacks, which comprise 98% of all malicious attacks on the Internet. Trial Tr. 3761:4–6, 3763:5–9 (Rubin).
130. Human reviewers also assist developers in resolving issues more efficiently. Trial Tr. 1109:12–1110:8; 1119:16–1120:4 (Kosmynka) (“ . . . Let’s try to figure out how to work with the developer within the construct of the guidelines and try to get great apps to the store.”; “Our goal is to work with developers and resolve issues . . . [and] make sure that they have the resources to resolve the issues.”). Apple’s human App Review team are committed to working with app developers to assess and resolve potential issues, which in some cases provides for a more straightforward identification and resolution of problems. Trial Tr. 1109:12–1110:8; 1119:16–1120:4 (Kosmynka); *see also* Trial Tr. 407:15–408:6 (Simon) (issues relating to Down Dog’s app were resolved after discussion between Down Dog and Apple’s App Review team). Human reviewers are also able to notify and work with Apple’s security and platform teams to take actions to investigate issues relating to such potential threats. Trial Tr. 1107:1–1109:11 (Kosmynka) (human reviewers “see a lot of apps” and are able to “send an app to Technical Investigations” when they see apps “personally that are clearly offensive, clearly a rejection, they’re also able to astutely know that there is a potential concern in these apps . . .”).
 131. Human review leverages Apple’s internal expertise. Trial Tr. 1077:20–1079:15; 1107:22–1108:19; 1116:18–1117:18; 1120:24–1122:4 (Kosmynka). In addition to training Apple’s proprietary machine learning App Review tools with the growing body of app review-related data, Apple’s App Review team is uniquely positioned to conduct manual review by using their built-up knowledge from App Review as well as their knowledge of and integration into the development of Apple’s iOS hardware and software. Trial Tr. 1107:22–1108:19 (Kosmynka). Apple, for example, develops subject-specific App Review teams to address unique issues. Trial Tr. 1078:20–1079:15; 1116:18–1117:18 (Kosmynka) (“needed cross-functional help . . . had hundreds of folks across the company helping to do this, and across the company in completely different organizations”). And Apple can merge these groups as new, cross-cutting problems emerge. Trial Tr. 1078:20–1079:15 (Kosmynka). For example, Apple formed the App Store Improvements Team—a group to ferret out certain forms of spam—by merging members of the App Review Misleading Fraud team and App Review Compliance team. Trial Tr. 1078:20–1079:15 (Kosmynka).
 132. Apple therefore uses—indeed, pioneered—robust manual review in the app review process, involving close to 500 Apple employees deployed across the globe. Trial Tr. 1082:16–1083:15 (Kosmynka). Apple records demonstrate the large number of submitted apps that are rejected. PX-0300; PX-0314.24; DX-4374. App Review also has an incredibly diverse team, with “diverse background[s] and skillsets” with native speakers of 81 different languages represented in the team. Trial Tr. 1082:16–1083:15 (Kosmynka). This diversity of the human review team allows new threats to be detected because “with 81 languages, the team does a good job of understanding risks and concerns across the world” including proactively finding “blue whale apps” that were “encouraging folks to commit suicide.” Trial Tr. 1107:1–21 (Kosmynka).

133. App review results in the rejection of about 35% of submitted apps. Trial Tr. 1041:11–22, 1042:5–9 (Kosmynka) (testifying that in 2017 the app rejection rate was 33%, in 2018 the app rejection rate was 35%, and in 2019 the app rejection rate was 36%). The increase in rejection rate is attributable to the improvement of the App Reviews processes and procedures. Trial Tr. 1118:8–1119:1 (Kosmynka). Most of these rejections prevent apps that have software glitches or bugs, or that would compromise users’ data privacy or security. Trial Tr. 1118:8–1119:12 (Kosmynka). In 2019 alone, Apple rejected over 150,000 app submissions for violating its privacy guidelines. Trial Tr. 1119:2–4 (Kosmynka); *see also* Trial Tr. 1119:5–6 (rejecting approximately 150,000 app submissions in 2019 “for privacy violations”). As a testament to the diligence of the app review team, generally, “less than one percent of the rejections are appealed by developers.” Trial Tr. 1042:25–1043:3 (Kosmynka).



- 133.1 Privacy is a common basis for rejection of an app. Trial Tr. 1090:18–1092:2 (Kosmynka). Some apps request too much information (such as access to photos) or request information that is irrelevant to the app’s functionality or purpose, and App Review ensures that customers receive transparency and have an opportunity to consent to the sharing of personal information. Trial Tr. 1090:18–1092:20 (Kosmynka).

134. Rejections also protect developers, such as when Apple rejects a low-quality copycat app. DX-4463.003 (Epic celebrating Apple's rejection of "Fortcraft," a *Fortnite* copycat). Apple applies the same principles to protect its own apps by rejecting apps which are confusingly similar to Apple's first party apps. Trial Tr. 1028:7–10 (Kosmynka). This curation works to all developers' ultimate benefit: By instilling confidence in consumers that they can trust the apps available on the App store, Apple makes it more likely that iOS users will use (and pay for) the apps developers make available on the App Store. Trial Tr. 1076:17–1077:3; 1085:1–12 (Kosmynka) ("We want to make sure that the App Store is a great place for customers to find safe and trusted apps and a great opportunity for all developers. That's the entire mission.").
135. Apple has improved its processes over time, making it both faster and more effective. DX-4178.076; Trial Tr. 1110:9–1111:2 (Kosmynka) ("Our goal and our promise that we've made to developers is that we complete a review for your app - - 50 percent of apps within 24 hours. We refer to this as our SLA our Service Level Agreement. . . .The SLA as of this morning [May, 7, 2021] was 96 percent within 24 hours."). In the last six years, Apple has updated its human review tool – Magellan – from version one to version 3 (and working towards Magellan 4) and continually improved its Mozart tool. Trial Tr. 1115:19–1116:17 (Kosmynka). Apple has made its speed of review "[a]n area that we're heavily focusing on." DX-4526.071. As of trial, Apple was reviewing 96% of apps within 24 hours. Trial Tr. 1110:9–1111:9; 1112:1–14 (Kosmynka) (discussing SLA turnaround times for App Review).
136. While Apple's app review processes do not prevent the distribution of every low-quality app, Apple continues to innovate and improve its technology, practices, and processes. Trial Tr. 994:22–24, 996:13–16, 1035:24–1036:4 (Kosmynka) (Apple static and dynamic analyses for App Review were developed at Apple), Trial Tr. 1182:3–20 (Kosmynka) (Apple to striving to "continuously be better"). App Review also includes a "Business Excellent Unit" that goes through "every mistake" and will "do a root-cause analysis and make . . . whatever necessary improvements, whether that is improvements to tools or performance management of individuals within App Review. Trial Tr. 1081:13–1082:3 (Kosmynka). Professor Rubin concludes that Apple's app review processes profoundly contribute to iOS app security. Ex. Expert 11 ¶¶ 36–43 (Rubin).
137. Apple employees also use their knowledge and expertise to continually improve app review tools as well as the safety, security, and trustworthiness of the iOS platform. Trial Tr. 1108:20–1109:11 (Kosmynka). Much of the software that Apple uses during App Review were created internally, and as Apple learns about new threats to the iOS ecosystem, it will update its review software, its hardware, and/or its software to combat those new threats. Trial Tr. 1095:23–1102:8; 1108:20–1109:11 (Kosmynka). As Epic's Engineering fellow, Mr. Andrew Grant, testified, "Apple engineers are great. They're knowledgeable, skilled. They're really motivated to make sure the developer is having a great experience." Trial Tr. 733:10–14 (Grant).
- 137.1 Epic's security expert testified that App Review provides only minimal security benefits. Trial Tr. 2679:15–20 (Mickens). He conceded, however, that if the term "security" included the prevention of physical, mental, and financial harm, his

opinion about App Reviews security benefits would be different. Trial Tr. 2679:21–2680:1 (Mickens). That is because his definition of “security” does not include protecting users from, for example, fraudulent apps that seek to obtain sensitive consumer information, or apps that distribute inappropriate content for children. Trial Tr. 2673:10–2674:23, 2685:8–18 (Mickens).

137.2 Moreover, Dr. Mickens reached his opinions without reviewing any internal Apple documents, including those related to security or app review. Trial Tr. 2631:16–21 (Mickens). Nor did he review, prior to his deposition, any deposition testimony from Apple employees. Trial Tr. 2632:7–11 (Mickens). Dr. Mickens did not have any direct evidence about the tools Apple uses for app review, Trial Tr. 2632:20–24, 2637:4–10 (Mickens), and did not review any documentation about the training process for app review, Trial Tr. 2632:25–2633:6, 2637:18–2638:3 (Mickens).

137.3 Dr. Mickens pointed to Apple’s Enterprise Program—which permits businesses with over 100 employees to distribute applications to its own employees on employer owned iPhones and iPads—as an example of a successful program for the distribution of apps that do not go through App Review. Trial Tr. 2667:12–25 (Mickens); Trial Tr. 3145:22–3146:11 (Schiller). But Dr. Mickens admitted that businesses are less likely to intentionally write a malicious app for their employees. Trial Tr. 2668:16–20 (Mickens). And even that program has sometimes been abused to distribute rogue or pirated apps. Trial Tr. 3146:13–3147:4 (Schiller).

E. Apple continues to protect consumer privacy and security after apps are published

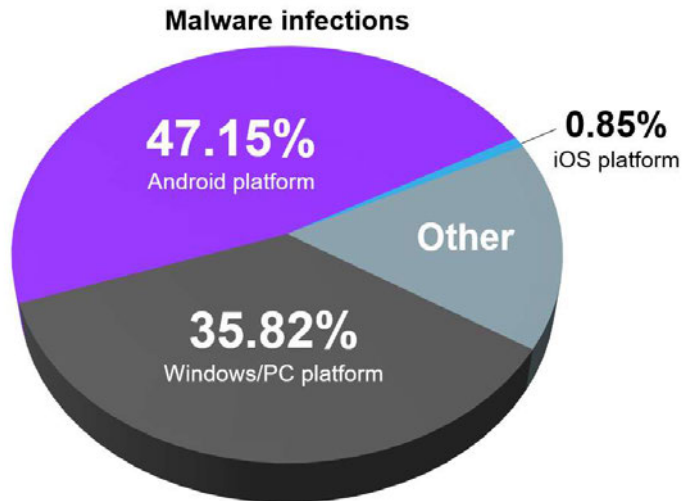
138. Apple’s fraud engineering, algorithms, and risk team (“FEAR” team) seeks to protect consumers from fraud, malware, and other threats. Trial Tr. 2836:22–2838:8 (Schiller). For instance, this group monitors developer behavior to combat any attempt to engage in fraud or otherwise compromise users’ private information. Trial Tr. 2837:7–20, 2838:22–2839:2 (Schiller). This group also monitors developers to ensure that they are not engaged in money laundering or other illicit behaviors. Trial Tr. 1116:18–1117:18 (Kosmynka) (“Our fraud organizations, which are not within App Review, help with app review and discovery abuse.”). [REDACTED]

[REDACTED]. PX-0059.155. Without IAP, the FEAR team loses “the ability to understand a number of the fraud vectors that our [FEAR] team manages to look for, fraudulent credit cards, fraudulent transactions across applications, and so we’ll just do a less good job for customers there as well.” Trial Tr. 3186:25–3187:16 (Schiller).

139. Apple also takes other measures to protect user privacy with respect to existing apps, such as requiring users to opt in for an app tracks their data and implementing differential privacy, which allows Apple to analyze de-individuated data. Trial Tr. 2681:15–19 (Mickens); Trial Tr. 3165:13–3166:15 (Schiller). Apple also spends substantial resources on manual reviewers and technical investigations team engineers. Trial Tr. 1116:18–1117:18 (Kosmynka) (“we grew the team by 20 engineers”; “[w]e would have had hundreds of folks across the company helping to do this, and across the company in completely different organizations”). And it has a number of tools in place to detect

malware on existing apps that it runs at periodic intervals to capture content at different times. Ex. Expert 11 ¶ 139 (Rubin). In addition, Apple freezes or terminates the accounts of developers who flout Apple’s guidelines. Ex. Expert 11 ¶ 89 (Rubin).

140. Apple has adopted privacy practices that are stricter than what is required in the United States and, rather, follows the lead of stricter privacy laws applied in Europe. Trial Tr. 3166:3–15 (Schiller). Not all developers agree with Apple’s approach to privacy, and Apple listens to those concerns, but it always prioritizes users. Trial Tr. 3848:12–21 (Cook).
141. As a result of the App Review efforts and Apple’s subsequent processes, there is a significantly smaller number of malicious iOS apps than those available on Android. In 2019, the iPhone platform accounted for just 0.85% of malware infections. DX-4975.008. By contrast, Android accounted for 47.15% and Windows/PC accounted for 35.82%. *Id.*



Among app stores, Android app stores have significantly higher numbers of malicious apps than the App Store. DX-4401.003–004; DX-4934.008; PX-0314.023; *see also* Trial Tr. 3851:12–3852:6 (Cook) (discussing similar statistics). Although Dr. Mickens testified that he believed Android and iOS are roughly equivalent in terms of their security profiles, yet admitted that he had no knowledge of whether Android actually has more incidents of malware than iOS. Trial Tr. 2630:12–2631:6 (Mickens); Trial Tr. 3390:10–12 (“Android has a considerable malware problem, something like . . . 50 times the malware of iOS.”). Dr. Mickens also relied on an article stating that iOS and Android face the same *kind* of risks from bad apps, but acknowledged that the article did not analyze the *frequency* of such bad apps making it through to each platform. Trial Tr. 2639:3–14, 2640:19–2641:5 (Mickens). Dr. Mickens also did not analyze the speed at which either iOS or Android responded to known issues. Trial Tr. 2646:5–20 (Mickens). In contrast, Mr. Federighi testified that “[t]he results [between Android and iOS] in the real world are just dramatically different, and it is well understood in the security community that Android has a malware problem, and that iOS has succeeded in, so far, staying ahead of the malware problem.” Trial Tr. 3391:10–13 (Federighi).

F. Over time, Google has been tightening its app screening process and moving to a system that is more similar to Apple’s

142. Recognizing the superiority of the iOS experience for consumers and developers, Google has moved from conducting no app review, to a purely automated review, to utilizing human reviewers as well. [REDACTED]. Ex. Expert 11 ¶ 57 (Rubin).
143. Given Apple’s superior security performance, [REDACTED]. Ex. Expert 11 ¶ 57 (Rubin); *see also* DX-4356.001 (“Although Google has taken steps to secure its Play store and stop malicious activity, hackers are still finding ways to infiltrate the app store and access users’ devices.”).

VII. The App Store Resulted In Significant Improvements In App Distribution, Including Game App Distribution

A. Before the App Store, distributing video games and other software was expensive and difficult, particularly for small developers

144. Before the App Store was launched, many challenges confronted developers who wanted to get their software—including games—to consumers. Trial Tr. 2725:23–2727:16 (Schiller).
145. In the 1980s and 1990s, games were often sold in disk form through retailers like Gamestop and Wal-Mart. DX-3710.003; Trial Tr. 1195:17–1196:1; 1198:7–10; 1247:20–1248:4 (Allison).
146. For developers, software distribution was a resource-intensive effort that often required robust marketing campaigns and retailer relationships. Trial Tr. 2726:16–10 (Schiller) (describing experience with negotiating shelf space and purchasing “end caps”). Developers had to make physical copies of their master copy or contract with publishers to do so. Trial Tr. 2726:16–21 (Schiller). They also had to undertake similar efforts to design manuals and shrink wrap and assemble the package to be shipped to the distributor. Trial Tr. 2726:21–2727:10 (Schiller).
147. Oftentimes, financing the packaging, advertising, and marketing of software was extremely expensive. Trial Tr. 2726:21–2727:13 (Schiller).
148. Before digital game transaction platforms, consumers also faced frictions—including a limited, expensive selection of game software that, to purchase and play, they had to drive to the store, find it on the shelf, buy it in a box, and load it up onto their device. Trial Tr. 2726:18–2727:10 (Schiller).
149. [OMITTED]
150. When Epic agreed to distribute other developers’ games in the 1990s, it collected a 60% commission—which Mr. Sweeney characterized as a “good deal” for developers. Trial Tr.

172:6–20 (Sweeney). Most distributors at the time charged 70–85% commission. Trial Tr. 173:4–12 (Sweeney); Trial Tr. 1196:2–1198:5 (Allison).

151. By 2003, just before digital game transaction platforms began to have commercial success, developers often continued to receive 30% or less of the revenue from sales of their software. Trial Tr. 173:4–174:19. (Sweeney); Trial Tr. 2089:24–2090:1 (Hitt); Trial Tr. 3862:1–10 (Cook).

B. The App Store upended the status quo

152. As described above, Apple equipped developers with powerful tools to build their apps. *See, e.g.*, Trial Tr. 2878:6–2884:23 (Schiller) (describing certain tools); *see also supra* § III. And developers then only had to submit their apps to Apple, which took care of the rest—including marketing, distribution, and billing. Trial Tr. 2742:6–16 (Schiller); *see also supra* § VI.
153. The App Store helped turn the prior revenue model on its head. *See* Trial Tr. 2727:11–13, 2741:22–2742:2 (Schiller). Whereas game developers had previously earned 30% or less of revenue, the commission collected by Apple was, at most, 30% of the transaction price. Trial Tr. 2727:11–13, 2741:22–2742:5 (Schiller).
154. As a result, many developers went from paying 70% of their revenue for publishing, distribution, marketing, and access to customers, to only paying 30% for the same services. Trial Tr. 173:4–175:18 (Sweeney); Trial Tr. 2726:18–2727:13 (Schiller). The App Store cut commissions essentially in half for paid games compared to traditional retail channels. Trial Tr. 173:4–175:18 (Sweeney); Trial Tr. 3862:1–20 (Cook). What is more, most transactions incurred no commission at all. Trial Tr. 2767:8–17 (Schiller) (describing prevalence of free apps, which pay no commission to Apple).
155. The deals negotiated by game developers before the App Store were generally much inferior to the revenue-sharing model that Apple introduced with the App Store. Trial Tr. 173:4–176:10 (Sweeney).
156. By providing developers far and wide with not only this new platform but also equipping them with the tools to use it, the App Store had a democratizing effect. Trial Tr. 2737:9–24 (Schiller). Prior to the App Store, developers were typically large companies. Trial Tr. 2737:16–20 (Schiller). The App Store—and tools Apple made available to developers—enabled smaller developers to compete. Trial Tr. 2737:9–24 (Schiller). The App Store created an environment in which everyone has equal opportunity to find success and prosper. Trial Tr. 2737:15–2738:1 (Schiller).
157. [OMITTED]
158. Consumers also benefitted. The App Store provided a new, seamless, secure transaction platform through which they could obtain mobile apps on iPhones. Trial Tr. 2741:7–14 (Schiller).

C. Apple has reduced its commission and the scope of transactions to which it applies

159. Following the introduction of IAP in 2009, Apple charged a 30% commission on two specific types of digital transactions on the App Store: Paid downloads and in-app purchases of digital services or content. Trial Tr. 2790:5–10 (Schiller). Apple has never charged a commission on free downloads. Trial Tr. 2741:18–21 (Schiller). Apple also does not charge a commission on physical goods or services purchased through an app or on revenues made from in-app advertising. Trial Tr. 957:7–13 (Fischer); Trial Tr. 2768:15–2769:6 (Schiller). In 2019, developers earned over \$400 billion in physical goods transactions through the App Store—all commission-free. Trial Tr. 2769:7–22.
160. Over time, Apple has reduced or eliminated the commission on certain kinds of transactions for certain categories of apps. Trial Tr. 2804:21–22 (Schiller); Trial Tr. 2088:1–14 (Hitt); Trial Tr. 3858:16–3859:4 (Cook); Ex. Expert 6 ¶¶ 165–66 (Hitt).
161. Apple introduced a reduced commission structure for subscriptions in 2016. Trial Tr. 2804:23–2805:11 (Schiller); Trial Tr. 3858:16–3859:4 (Cook).
 - 161.1 Apple had introduced subscriptions in February 2011, allowing developers to use IAP for recurring purchases. Trial Tr. 2801:21–2802:1 (Schiller); DX-3060. At the time, these subscription purchases were subject to the standard 30% commission. Trial Tr. 3184:2–25 (Schiller). This commission applied each time the subscription was renewed. *Id.* As Phil Schiller made clear on both cross-examination and redirect, there was no way for developers to sell subscriptions *in-app* prior to 2011. Trial Tr. 3100:19–22, 3104:8–14, 3183:9–3184:1 (Schiller); *see* Trial Tr. 3102:14–17 (Schiller) (“The rule from the day we opened the store was . . . all digital purchases . . . within apps or with apps at all on the App Store need to use our payment model. That’s what has always been the rule from the beginning.”). Developers *could* “sell content and services on their website,” including subscriptions—that is allowed, was allowed, and has always been allowed. Trial Tr. 3100:19–22 (Schiller).
 - 161.2 In 2016, Apple lowered the commission on subscription renewals. Trial Tr. 2804:23–2805:11 (Schiller); PX-2621.005; DX-4632.002. Specifically, Apple amended the DPLA to charge only a 15% commission on subscription charges after the first year to 15%. Trial Tr. 3106:10–13 (Schiller); PX-2621.005; DX-4632.002.
162. The Video Partner Program is another example in which Apple reduced the commission charged on certain transactions. Trial Tr. 2806:15–21 (Schiller); Trial Tr. 3861:11–18 (Cook); DX-3421. This program applies to premium subscription video providers who integrate their services into the Apple TV app. Trial Tr. 2806:6–15 (Schiller); DX-3421. Those providers then pay only a 15% commission to Apple when users make an in-app purchase of a subscription to their content streaming. Trial Tr. 2806:15–21 (Schiller); DX-3421.
163. In 2011, Apple implemented the “reader rule.” Trial Tr. 2802:2–2803:7 (Schiller); DX-3115. The reader rule came about as a result of the evolution of the way users used

Amazon's Kindle Reader app as users were beginning to read books on their iOS devices. Trial Tr. 3196:8–3197:18 (Schiller). This rule permits developers to create apps that allowed users “to access previously purchased content or content subscriptions,” like “magazines, newspapers, books, audio, music, and video,” so long as the developer does not “encourage users to use a purchasing method other than in-app purchase.” PX-2790.11; *see also* Trial Tr. 2802:2–2803:4 (Schiller). Apple receives no compensation or commission for subscriptions made outside the app, but that consumers consume within the app. Trial Tr. 2803:2–4 (Schiller).

164. For instance, under the reader rule, Netflix and Hulu could permit users to watch video content in the app based on a video subscription that had been purchased on a user's computer. DX-3363.
165. In 2018, Apple also clarified its policy for apps that operate services across multiple platforms to allow developers to monetize their apps without paying a commission to Apple. Trial Tr. 2808:6–2809:3 (Schiller).
 - 165.1 Apple's Multiplatform Rule allows users of apps that operate across multiple platforms to access content, subscriptions, or features they have acquired in an app on other platforms or a web site, including consumable items in multi-platform games, provided those items are also available as in-app purchases within the app. PX-2790.10–.12 (§§ 3.1.1 & 3.1.3); *see* Trial Tr. 2808:19–2809:3 (Schiller).
 - 165.2 For example, a user on an Android device could download Microsoft's Minecraft using the Google Play Store and then download Minecraft again on the App Store and play using the same Minecraft user account without needing to repurchase in-game items. DX-3796.003–004 (Mr. Schiller: “If users play Minecraft on for example the PC, and purchase goods there, and then run Minecraft on iOS or Apple TV with the same log on they would expect those goods to be there as well. . . . this is a big deal.”); Trial Tr. 647:24–48:11 (Wright). Apple receives no commission on paid content purchased through other platforms. Trial Tr. 2809:4–14 (Schiller).
 - 165.3 In contrast to some other platforms, Apple also permits cross-wallet functionality, which allows for purchases made on one platform to be used on another. Trial Tr. 197:1–18, 238:9–239:17 (Sweeney); Trial Tr. 3208:8–16 (Schmid); Apple Ex. Depo. 2 at 83:12–16 (Kreiner). For example, an iPhone user can easily purchase V-Bucks from Epic's website using the iPhone's Safari or Chrome browsers (a transaction which would result in no commission to Apple) and spend them on the Xbox. Trial Tr. 299:9–20 (Sweeney).
 - 165.4 Also unlike certain consoles, Apple does not require price parity; that is, developers are free to price their in-app content on apps downloaded from the App Store higher than the same content sold through other platforms. Trial Tr. 2819:18–2820:2 (Schiller). [REDACTED]. DX-3582.003.

166. Most recently, in January 2021, Apple launched its App Store small business program. Trial Tr. 2810:16–2811:5 (Schiller); DX-4168. This was another “industry-leading new developer program to accelerate innovation and help small businesses and independent developers propel their businesses forward.” DX-4096.001. To that end, the program reduced the commission rate to 15% for many smaller app developers. *Id.*; Trial Tr. 2088:10–14 (Hitt); Trial Tr. 2810:19–2811:5 (Schiller). Earlier this year, Google followed suit, announcing a similar reduction in commission rates for *all* app developers, charging 15% commission on the first \$1 million of revenue per year, and then 30% after that, resetting every year. Trial Tr. 2815:17–23 (Schiller); Trial Tr. 3860:4–10 (Cook).
- 166.1 Apple had contemplated reducing the commission for small developers as early as 2016, and continued internal discussions to the present, including in at least one email chain in 2018. Trial Tr. 2810:24–2811:1, 2811:15–2812:15 (Schiller); *see also* Trial Tr. 3859:5–19 (Cook) (discussing relationship between the COVID-19 pandemic and the rollout for the small business program).
167. Apple has never increased its commission on paid downloads or in-app purchases, nor has it increased the \$99 annual fee charged to developers who wish to distribute apps through the App Store. Trial Tr. 2740:8–15, 2763:17–22 (Schiller). Apple’s revenue from Search Ads beginning in 2016 does not represent an increase in commission, because no developer is required to use Search Ads in the first place. Trial Tr. 2816:17–18 (Schiller).

VIII. Consumers And Developers Have Benefitted From Apple’s Continuous Investment And Innovation

168. Apple has continued to invest in improvements that directly or indirectly enhance the App Store experience for developers and consumers alike. Trial Tr. 933:20–934:2 (Fischer) (describing Apple’s investment in the 2017 redesign); Trial Tr. 2877:2–20 (Schiller); Trial Tr. 3857:4–23 (Cook). Apple’s internal documents repeatedly discuss its plans to create new features on the App Store. PX-0059.099, .0157; PX-0146; DX-3422.
- 168.1 At trial, Epic pointed to Apple documents with surveys of developers that contain negative comments about the App Store. But Epic focused exclusively on figures related to one narrow issue—search and discoverability—which, given the nature of search results (in which only one developer’s app can be the top result for a given search) almost always leaves some developers dissatisfied. Trial Tr. 4001:7–9.
- 168.2 These same documents show that developers overall have very high levels of satisfaction with the App Store. The same 2017 survey cited by Epic shows that 64% of developers were somewhat or very satisfied with the App Store, and only 22% were very or somewhat dissatisfied. DX-3922.063. This is not an anomaly: A similar study conducted in 2018 showed 65% of developers were very or somewhat satisfied with the App Store overall, and only 19% were somewhat or very dissatisfied. DX-3513.015. And many other surveys—which Apple regularly conducts—contain many positive comments about the App Store. PX-2062.006–.007 (“Apple App Store is the best”; “I am very satisfied”; “[I]t is clear that Apple

cares about the App Store”); DX-3781.008 (“Most developers are generally satisfied.”).

- 168.3 These surveys demonstrate that Apple seeks feedback—both positive and negative—from developers to improve and innovate. Trial Tr. 885:10–13, 948:8–24 (Fischer). As one example, early developer surveys indicated that “[t]he App Review process” was “an issue for many.” DX-3781.013 (July 2010). As Mr. Kosmynka explained, Apple invested heavily in App Review and turns around 96% of submissions within 24 hours. Trial Tr. 1110:9–111:9, 1112:1–14 (Kosmynka). Complaints that the review process is slow are now infrequent. Trial Tr. 1002:15–21 (Kosmynka). And of course, Apple rejects about 40% of all apps submitted for review, so there are bound to be dissatisfied developers. Trial Tr. 3994:3–13 (Cook).
- 168.4 Ignored by Epic are Apple’s *user* satisfaction surveys, which show even higher levels of satisfaction. In 2017, 87% of U.S. consumers were satisfied with their iPhone. DX-4275.205. Among the relatively few unsatisfied U.S. consumers, none of the top complaints related to the App Store or apps. DX-4275.207–.218. In 2019, 86% of U.S. consumers were satisfied with their iPhones. DX-4089.056.
169. Apple’s investment in the App Store has been significant. Indeed, Apple spent approximately \$100 billion in research and development since 2005, including billions in software, hardware, services, and other tools related to the App Store. Trial Tr. 2877:2–12 (Schiller); Trial Tr. 3613:5–12 (Malackowski); Ex. Expert 12 ¶ 22 (Malackowski). As a result, Apple has continued to iterate on and grow these features year after year. Trial Tr. 948:2–15, 949:13–20 (Fischer) (describing how developer feedback helps Apple “improve the App Store experience”).
170. As a result, Apple’s devices, software, and platform outperform its peers. Trial Tr. 3845:7–21 (Cook). Even Mr. Sweeney acknowledged that he loved the iPhone’s aesthetic and liked most of the versions of its hardware as well as most of the aspects of its operating system. Trial Tr. 302:1–15 (Sweeney).
- A. Apple has relentlessly invested in software, hardware, and integration innovations**
171. Among the major technical innovations introduced by Apple in early iPhones was a built-in accelerometer. Trial Tr. 2878:6–20 (Schiller); DX-5335.001. The accelerometer was embedded in the first iPhone’s design—among the first smartphones to do so. DX-5335.001; Trial Tr. 2878:19–20 (Schiller). The accelerometer measured changes in velocity along three axes. DX-5335.001; *see* Trial Tr. 2878:16–18 (Schiller). Among other things, this allowed users to appreciate games (and other features) in the viewing format best suited for the content displayed on screen. Trial Tr. 2879:21–24 (Schiller).
172. Apple rolled out two more major innovations the next year. As discussed above, Apple introduced IAP—a key innovation that enabled developers to adopt new business models involving the delivery of digital content. *See supra* § III.F. Apple also introduced Push Notification Service. DX-5335.002. This allowed apps to send users a message when

something changed in the apps, which allows developers to give various prompts to users and allows users to be reminded about important developments in their apps (rather than having to constantly open and check the apps). DX-5335.002;. In December 2019, Mr. Ko of Epic stated that outside of the App Store and Google Play, “there is really no truly comprehensive payment solution that does everything needed for a game company.” DX-4496; Trial Tr. 816:5–25, 817:20–24 (Ko).

173. In 2010, Apple introduced gyroscope hardware. Trial Tr. 2878:25–2879:5 (Schiller); DX-5335.003. Gyroscope is a motion sensor embedded in Apple’s mobile devices that can sense motion on three axes and works with the accelerometer to capture information about the device’s position. DX-5335.003; Trial Tr. 2879:6–9 (Schiller). This allowed developers to build new features into apps, providing iOS users with more complex apps. Trial Tr. 2879:10–17 (Schiller); *see also* DX-5335.003.
174. That same year, Apple also made a “big breakthrough” by introducing the Retina Display, which improved screen resolution, making individual pixels unperceivable to the average human eye at a distance of 12 inches. Trial Tr. 2879:18–2880:6 (Schiller); DX-5335.004. In subsequent years, Apple would continue to expand the iPhone display size, and also eliminate the home button, further increasing the usable footprint of the screen and improving user-interface options for app developers. DX-5335.004.
175. In 2013, Apple introduced Touch ID and vastly improved iPhone hardware. DX-5335.005.
 - 175.1 Touch ID is a sensor that reads fingerprints. DX-5335.005. Touch ID was considered to be more reliable and more secure compared to past efforts to include a fingerprint scanner. DX-5335.005. Apple’s Keychain and password innovations have provided further protection for user security. Trial Tr. 3167:19– 3168:25 (Schiller).
176. [OMITTED]
177. In 2015, as part of the iOS9 update, developers got access to three new gaming SDKs: GameplayKit (which helps create artificial intelligence), and ReplayKit (which lets users record and share gameplay). Trial Tr. 2901:4–2902:10 (Schiller); DX-5335.011. That same year, Apple released the Taptic Engine, which is Apple’s mechanism for haptic feedback on the iPhone. DX-5335.011; Trial Tr. 2880:23–2881:1 (Schiller). Haptic feedback recreates a sense of touch or movement using a motor that emits different levels of vibration power and sensations. DX-5335.011; Trial Tr. 2881:2–12 (Schiller).
178. In 2016, the iPhone 7 was upgraded with stereo speakers, providing dynamic range for better sound quality. Trial Tr. 2881:20–2882:7 (Schiller); DX-5335.006.
 - 178.1 In 2017, Apple introduced the Neural Engine, which was optimized for machine learning and allows developers to use advanced programming techniques that can free up the phone’s central processing unit and graphics processing unit to do other functions. Trial Tr. 2882:15–2883:10 (Schiller).

179. In 2017, Apple launched Face ID. DX-5335.016. Consumers could now use Face ID to make secure in-app purchases. DX-5335.016. Apple also began to sell phones, beginning iPhone X, using OLED display technology, which provides blacker blacks and higher contrast ratios. Trial Tr. 2880:10–21 (Schiller).
180. Apple unveiled a series of hardware and software upgrades in 2019, including download improvements as well as Screen Time Controls, Digital Wellness, and Dark Mode. DX-5335.006. In 2019, Apple also launched a new Machine Learning Model and introduced a major upgrade to its fraud-prevention system. PX-0059.155.
181. In the last year, Apple has continued to roll out new improvements, including LiDAR and M1 ARM Chips. DX-5335.007.
 - 181.1 In 2020, Apple introduced LiDAR (Light Detection and Ranging) for certain iPhones. DX-5335.007; Trial Tr. 2883:11–20 (Schiller). This built upon existing smartphone technology by improving the range of scanning technology, improving the quality of photos, and enabling sharper augmented reality (including for augmented reality game apps). Trial Tr. 2883:11–2884:23 (Schiller).
182. Apple’s iPhone hardware has kept pace with these newest software innovations. Trial Tr. 2889:13–2893:18 (Schiller); DX-5335.007. Apple designs its own chips, with new series every year, and has been making significant improvements in its chips throughout the life of the iPhone. Trial Tr. 2890:6–2891:24 (Schiller). As a result of Apple’s innovations, the core processing performance of iPhones has increased “one hundredfold.” Trial Tr. 2893:3–11 (Schiller). As Mr. Sweeney said, the iPhone remains a premium product to this day. Trial Tr. 302:16–18 (Sweeney). This has allowed developers to take full advantage of software innovations and deliver ever more sophisticated and higher-quality apps. Trial Tr. 2893:24–2894:14 (Schiller).
 - 182.1 Apple also has invested in updates to its cellular technology. The original iPhone used Edge, a faster version of 2G. Trial Tr. 2885:7–12 (Schiller). In 2008, Apple “added 3G and brought that into the network,” in 2012, “the next generation came into iPhone called LTE, stands for long term evolution,” and in 2020, “Apple implemented the latest standard which is 5G.” Trial Tr. 2886:1–2887:10 (Schiller). Although Apple did not “invent cellular networks,” its “teams had a lot of work to do to bring them out in a way that worked well for [its] customers.” Trial Tr. 2886:1–2887:10 (Schiller). Apple has “a huge team that has to engineer both the hardware and the software, as well as test it, on every carrier network around the world.” Trial Tr. 2887:15–19 (Schiller). Apple similarly has been adapting its devices to be compatible with new Wi-Fi technologies. Trial Tr. 2888:18–2889:3 (Schiller).
183. [OMITTED]
184. This partial list includes only some of the major features and functionalities Apple has added since it introduced the first iPhone. Trial Tr. 2930:25–2931:4 (Schiller); DX-5335.001–019. All in, Apple has made thousands of hardware, software, and firmware

improvements to the iOS ecosystem. Trial Tr. 2931:5–15 (Schiller); Trial Tr. 741:7–24, 747:1–10, 751:1–752:7 (Grant) (acknowledging Apple has consistently improved the iPhone and related software tools); Trial Tr. 744:10–25 (Grant) (testifying that while the PlayStation 4 “substantially outperformed mobile platforms” when launched, the iPhone arguably exceeds its processing power now). In this respect as in others, Apple has shown itself to be a relentless innovator. Trial Tr. 2931:5–15 (Schiller). As Mr. Sweeney conceded in response to the Court’s questioning, it was these technological innovations to the iPhone that enabled it to run “a game as graphically elaborate as *Fortnite*.” Trial Tr. 144:16–45:10 (Sweeney); Trial Tr. 740:23–741:5 (Grant).

B. Apple has relentlessly invested in new developer tools, and improvements to existing tools

185. Apple has developed an extensive array of tools that it licenses to app developers. Trial Tr. 2894:15–2902:10, 2924:8–2930:24 (Schiller); Ex. Expert 12 ¶¶ 20, 31 (Malackowski). Some of these tools were developed entirely internally; others were based on open source software. Trial Tr. 2940:6–10, 3189:7–10 (Schiller). But in all instances, even when utilizing open source software, Apple “build[s] and improve[s]” the software and tools “with its own technology and innovation.” *Id.*
186. As noted above, Apple invested substantial resources in creating a state-of-the-art SDK in advance of the App Store’s launch. *See supra* § III.D.
187. Apple releases new, expanded SDKs with each major release of iOS. Trial Tr. 2894:23–2895:5 (Schiller). These SDKs help developers take advantage of new technologies and features of iOS and Apple’s mobile devices. Trial Tr. 2731:17–2732:5 (Schiller).
188. Epic’s Infinity Blade was among the first game apps to integrate GameKit features. DX-5335.009.
189. [OMITTED]
190. The next year, Apple introduced Sprite Kit. Sprite Kit is a powerful graphics framework ready-made for developing 2D games. Trial Tr. 2896:17–2897:4 (Schiller). It included built-in physics support—for example, when objects on the user’s screen bump into each other—and simplified the process of developing these types of games. *Id.* (Schiller).
191. In 2014, Apple provided developers with Metal—a particularly potent developer tool. Trial Tr. 2897:6–20 (Schiller); *see also* DX-4154.
 - 191.1 Metal is a powerful computer graphics API. Trial Tr. 2897:9–14 (Schiller). It was a vast improvement over its predecessor, and it continues to improve. Trial Tr. 2900:17–23 (Schiller). By Epic’s admission, Metal is “fast, agile, [and] feature-rich,” Apple Ex. Depo. 5 at 67:9–68:8 (Penwarden), and “bl[ew] away” competitors “in every way,” DX-3098.001; DX-3068.001; Trial Tr. 247:8–11; 250:9–251:1 (Sweeney).

- 191.2 *Fortnite* takes advantage of Metal’s powerful capabilities. Epic’s VP of Engineering, Nicholas Penwarden, testified that “working with Metal [was] a dream” compared to the tools then available on Android. Apple Ex. Depo. 5 at 63:9–13 (Penwarden). “[G]etting *Fortnite* running on iOS using Metal was a very positive experience and, again, easier than the experience we had on Android platforms.” Apple Ex. Depo. 5 at 62:16–19 (Penwarden). Metal was “the number one differentiator that allowed [Epic] to get Battle Royale running on iOS faster than on Android.” Apple Ex. Depo. 5 at 66:13–21 (Penwarden). Mr. Sweeney testified that Metal contributed to Epic’s ability to build a top-quality version of *Fortnite* for iOS. Trial Tr. 247:8–11 (Sweeney).
192. After Apple acquired TestFlight (a mobile app testing system) in 2014 to provide better beta testing service to its developers, Apple added key features to it (such as allowing multiple versions of an app to be tested simultaneously), and then integrated it into its suite of iOS development tools. Trial Tr. 1077:4–19; 1116:19–1117:18 (Kosmynka). This provided developers with a controlled environment in which they could test and refine their apps. Trial Tr. 574:13–575:2 (Wright). And a survey showed that by 2015 73% of large developers already were using TestFlight and another 11% intended to do so. DX-3800.097–098. TestFlight caused “excitement in the market.” Trial Tr. 574:24–75:2 (Wright).
193. In 2017, Apple provided developers with ARKit and Core ML. Trial Tr. 2924:14–15, 2928:15–19 (Schiller).
- 193.1 ARKit is a set of tools for developers to create augmented reality (AR) apps and features. Trial Tr. 2924:16–2925:6 (Schiller);. ARKit provides “a number of advanced technologies that allow for placing computer-generated imaginaries in the real world as seen through your iPhone’s camera.” Trial Tr. 2924:21–2925:1 (Schiller). One example of the type of app that ARKit enables is Animal Safari, which allows users to place virtual life-sized animals in their real-world surroundings. Trial Tr. 2925:9–17 (Schiller).
- 193.2 As Apple continued to improve ARKit, Epic acknowledged internally that its capabilities were industry-leading. DX-4119.001 (“Two of the most impressive features (human occlusion of CG and live mocap) are powered by tech in the new version of ARKit and were described as ‘exclusive to iOS.’”); *see also* DX-3556.001 (Epic employees remarking “Sweet!” and “Awesome news” when another employee reports that he “found the hardware accelerated HEVC apis that iOS devices support. This means the AR streaming thing I did can be hardware encoded/decoded on iDevices to/from Mac/PC.”); Trial Tr. 747:1–10, 751:1–752:7 (Grant). Mr. Sweeney also admitted that Apple’s ARKit was a “robust” AR SDK and that he expected Apple to be “significant AR market participant.” Trial Tr. 287:20–288:8. These improvements are particularly valuable for game users and developers as augmented reality likely will be a significant factor in the future of gaming. Trial Tr. 746:14–17.

- 193.3 Core ML provides developers with machine learning “tools that help software predict what may happen and then respond appropriately for the user to help them do things not possible with traditional software.” Trial Tr. 2928:20–2928:2 (Schiller). For instance, Core ML was used in part to create the HomeCourt basketball app, which can be used to calculate in real-time a basketball player’s arm angle, leg angle, release angle for a shot, and more, all of which are useful for coaches and players. Trial Tr. 2929:23–2930:8 (Schiller). Core ML will become more and more useful for game developers as time goes on. Trial Tr. 2929:13–15 (Schiller).
194. In 2019, Apple improved its suite of AR tools with Reality Kit and Reality Composer. RealityKit is a simpler version of ARKit that “make[s] it easier for the developer to take advantage of . . . ARKit,” especially less experienced developers. Trial Tr. 2926:14–17, 2927:15–19 (Schiller);. Reality Composer is a new utility app that allows designers to edit AR scenes, animations and events from Mac and iOS devices. Trial Tr. 2927:23–2928:2 (Schiller). These tools enabled more developers to create AR apps with better features but fewer resources. Trial Tr. 2927:20–2928:7 (Schiller).
195. [OMITTED]
196. To date, Apple has created and made available more than 150,000 APIs. Trial Tr. 2894:21–22 (Schiller); Ex. Expert 12 ¶ 20 (Malackowski). It also has continually improved the APIs, rolling out updates, fixes, and new versions of many APIs in successive SDKs. Trial Tr. 2894:23–2895:14 (Schiller). For instance, Apple has enabled support for third-party controllers to be used in iOS games. Ex. Expert 6 ¶ 146 (Hitt).
197. As a result—and by Epic’s own admission—Apple’s APIs are superior to Android’s. Apple Ex. Depo. 5 at 69:8–70:9 (Penwarden). Indeed, the breadth, depth, and quality of Apple’s APIs allowed Epic to launch *Fortnite* faster on iOS than Android. Apple Ex. Depo. 5 at 70:3–9 (Penwarden). Mr. Sweeney admitted that Epic itself has used thousands of Apple’s APIs and tools over the years. Trial Tr. 246:21–25 (Sweeney).
198. On top of all this, Apple also created Swift in 2014, an open-source, easy-to-learn, general-purpose language, built specifically using a modern approach to safety, performance, and software design patterns. DX-5335.010. This allowed developers to program iOS faster than they had been able to do with previous languages. DX-5335.010. And it became popular: By 2019, the Microsoft Outlook, Hulu, Tinder, Postmates, and Walmart apps, among others, were written, at least in significant portion, with Swift. DX-5335.010.
199. In addition to these technologies and services, Apple also spearheaded several programs to benefit the developer community and, consequently, enhance the broader ecosystem. Trial Tr. 2931:5–2932:7 (Schiller).
- 199.1 For example, developers were able to announce and demonstrate new products and features at Apple’s Worldwide Developer Conference (“WWDC”). Trial Tr. 747:11–748:14 (Grant). Indeed, Epic has given presentations and demonstrated its

products, including *Fortnite* and *Infinity Blade*, at WWDC and Apple media events. Trial Tr. 747:11–748:9 (Grant); Trial Tr. 937:12–20 (Fischer).

199.2 Apple has helped create schools at “both the high school and college level around the world in Brazil, in Indonesia, in Italy, in China, everywhere [it] can to help create the next generation of developers to unleash their visions in the world.” Trial Tr. 2932:2–6 (Schiller).

199.3 More generally, Apple is committed to improving the app review process. Trial Tr. 1037:17–20 (Kosmynka) (“the fact that mistakes exist means we’ve got to be better at [app review] and you need human beings to do that”) Apple freely admits that in the process of reviewing thousands of new apps a week, Trial Tr. 1039:4–17 (Kosmynka), that occasionally mistakes are made. Trial Tr. 1036:23–1037:2 (Kosmynka). When those mistakes in the application of app review guidelines are identified the mistakes are taken seriously, Trial Tr. 1042:14 (Kosmynka), the app review team does what they can to quickly rectify the problem and to prevent them from reoccurring, Trial Tr. 1036:23–1037:2 (Kosmynka). Despite the small number of mistakes in app review relative to the millions of apps and updates that are reviewed, as Mr. Kosmynka testified, “a single incident does not make me question the overall effectiveness [of app review].” Trial Tr. 1042:14–18 (Kosmynka); see also Trial Tr. 1042:7–9 (Kosmynka) (in 2019 there were 4,808,685 app submissions). “We proactively catch the [vast] majority of issues. We certainly do miss some. I think it is a small fraction.” Trial Tr. 1183:12–1184:6 (Kosmynka).

199.3.1 At trial, Epic pointed to an example of an app that made it through App Review called *High School Rescue Squad* in which users played as characters protecting a school and other locations from attack, which was not appropriate under App Review guidelines. Trial Tr. 1180:1–1182:2 (Kosmynka); *see also* PX-0131. Once the app was discovered, App Review removed the app, removed similar apps from the same developer, and audited to investigate the mistakes that had been made. Trial Tr. 1180:1–1182:2 (Kosmynka).

199.4 Even Epic’s own executives concede Apple’s developer support is at least on par with other platforms’ and Apple’s engineers are “great.” Trial Tr. 732:23–733:14 (Grant).

C. Apple fiercely protects consumer privacy

200. Consistent with its belief that privacy is a human right, Trial Tr. 3937:8–11 (Cook), Apple has made it a priority to implement a number of features and tools to provide better protection of iOS users’ privacy. Trial Tr. 2723:2–16 (Schiller). Consumer surveys confirm that privacy is a “very key factor” for consumers when choosing Apple. Trial Tr. 3848:22–3849:7 (Cook). Mr. Ko, Epic’s payment processing specialist, confirmed that data privacy is a core concern for customers, including those of Apple and Epic. Trial Tr. 819:21–820:3 (Ko).

201. In 2019, for example, Apple introduced “Sign in with Apple.” DX-5335.015. This feature allows users to securely log in to new apps in one click while also “hiding” their real email addresses from developers, reducing the ability of third-party sign-in services to track and share users’ personal data. *Id.*
202. Also in 2019, Apple gave users the additional option to share their location with an app once (rather than always, never, or while using the app)—giving consumers greater control over their sensitive location information. DX-5335.015.
203. In 2020, Apple gave users even greater control over their location information by allowing them to share only their *approximate* location with developers. DX-5335.015. Apple also created an on-screen indicator to inform users when their microphone or camera were on—a feature previously available on laptops but not on smartphones (indeed, a feature that some Android some phones still do not have). DX-5335.015.
204. Apple also recently introduced “Privacy Nutrition Labels” in which developers must describe the privacy practices for each particular app on its App Store page. Trial Tr. 3408:18–23; Trial Tr. 3847:15–3848:3 (Cook). This includes identifying all data the developer or its third-party partners collect (unless specified exceptions apply). DX-5335.015. This allows users to learn about f the data types the app may collect, and whether that data is linked to them or used to track them. DX-5335.015.
205. In addition, Apple is implementing “App Tracking Transparency.” Trial Tr. 3166:16–3167:7 (Schiller); Trial Tr. 3409:18–3410:4 (Federighi). App Tracking Transparency will require apps to get the user’s permission before tracking their data across apps or websites owned by other companies. Trial Tr. 3166:16–3167:7 (Schiller); Trial Tr. 3409:18–3410:4 (Federighi). This will allow users to make more informed choices about the apps they use and the permissions they grant to those apps, including whether to allow apps to track them. Trial Tr. 3166:16–3167:7 (Schiller); Trial Tr. 3409:18–3410:4 (Federighi).
206. As a result of these and other innovations and policies, Apple has outpaced its competitors in protecting consumers’ privacy. Ex. Expert 11 ¶ 44 (Rubin). Mr. Sweeney, an iPhone user, said that he found Apple’s approach to privacy and customer data security superior to Google’s approach to customer privacy and customer data. Trial Tr. 302:22–303:4 (Sweeney). Mr. Sweeney further agreed that “if Apple were to compromise those fundamental differentiators,” it may lose a competitive advantage over Android, depending on those changes. Trial Tr. 303:11–16 (Sweeney).

D. Apple also continually improves the App Store storefront

207. Since the App Store’s 2008 launch, Apple has continually sought to improve the storefront’s interface and capabilities—for the benefit of both developers and users. Trial Tr. 2747:14–25 (Schiller).
208. For example, Apple redesigned the App Store in 2012 to replace the “Categories” tab with “Top Charts” and “Genius” tabs. DX-5335.018. These offered personalized recommendations for iOS Applications. *Id.* This helped users to find apps they were most likely to enjoy; it helped connect developers with the customers most likely to purchase

their products. *Id.* The current list of app categories is available at <https://developer.apple.com/app-store/categories>. Trial Tr. 1191:7–24 (Kosmynka).

209. Between 2014 and 2016, Apple made at least three significant improvements to the App Store relevant to game app developers and game app users experiences. First, Apple optimized the App Store’s search capabilities. Trial Tr. 3963:12–19 (Cook). Second, Apple created App Previews, a feature that allowed developers to showcase up to three videos to potential players, and introduced the “Explore” tab. DX-5335.018. Third, Apple introduced Search Result Ads, allowing developers to pay to promote their App when a user searched relevant keywords to a users’ text input. Trial Tr. 2816:1–16 (Schiller). Apple does not promote its own products in Search Result Ads. Trial Tr. 2819:10–14 (Schiller). Moreover, Apple’s search algorithms do not preference Apple products or apps but rather is based on 42 different factors. Trial Tr. 3139:3–14, 3141:7–3142:14 (Schiller). Each of these features improved user acquisition for game app developers, particularly small ones. Trial Tr. 2818:15–2819:6 (Schiller).
210. In 2017, Apple overhauled the App Store’s U.S. storefront again. Trial Tr. 927:15–18, 929:9–11 (Fischer); DX-3642; PX-0059.011; PX-1932. This was a “ground up” redesign that “ma[de] discovering apps and games easier than ever before.” DX-3642.001; DX-3202.
 - 210.1 The redesign included new tabs to improve discoverability. DX-5335.019. For example, the “Today” tab featured exclusive premieres of new apps, news releases, recommended tips, and how-to guides that were updated daily by App Store’s global team of editors. Trial Tr. 929:18–930:2 (Fischer). To make navigation even easier, the redesign also added “Games” and “Apps” tabs to the App Store—allowing users to find game apps separately and more efficiently. Trial Tr. 932:7–15 (Fischer). This essentially provides free marketing to developers, who benefit from the improve store design that enables users to more easily find their apps. DX-3055.006.
 - 210.2 In addition, the redesign also made in-app purchases more discoverable by displaying them on an app’s product page and in search results. DX-3642.006; DX-5335.019. And Apple included other changes to offer better showcases of an app’s content and easier-to-read information about an app’s rank, rating, and reviews. DX-5335.019.
 - 210.3 Nor were these innovative interface improvements easily implemented. The redesign required a significant investment from Apple. Trial Tr. 934:23–935:7 (Fischer).
211. Most recently, Apple has undertaken an enormous effort to cull from the App Store apps that no longer function as intended, do not follow current review guidelines, or are outdated. DX-4399.064 (Over 400,000+ apps have been removed as part of the cleanup program”); Trial Tr. 1078:20–1079:15 (Kosmynka) (“App Store Improvements is - - it’s an ongoing process to continuously clean and curate the live apps on the store.”). To that end, Apple is evaluating and removing apps in all categories on an ongoing basis. Trial

Tr. 1137:13–21 (Kosmynka) (App Improvement program “removed 400,000 or more apps” from the App Store).

IX. The App Store’s Business Model Has Contributed To The Rapid Proliferation Of Apps, Including Game Apps

212. The App Store’s business model helped lead to digital distribution becoming the prominent form of game distribution. DX-3710.003, .010.
213. From the start, Apple’s goal was “to get as many apps out in front of as many iPhone users as possible.” PX-0880.021. Apple has done so by creating tremendous growth in every facet of app distribution: The number of developers creating game apps for iOS users, the number of consumers who use and enjoy those game apps, the number of game apps available on the App Store, the number of transactions of game apps, and the amount consumers have paid and developers have earned from those game app transactions. Trial Tr. 3861:17–18 (Cook). In short, the App Store has enjoyed explosive growth, driven significantly by the positive indirect network effects between app developers and users. Ex. Expert 8 ¶¶ 16, 127–30 (Schmalensee); *see also* Trial Tr. 1679:24–1680:14 (Evans) (Dr. Evans agreeing that “the output of the App Store has grown explosively by any reasonable measure”); Trial Tr. 2326:22–24 (Cragg) (agreeing to “explosive growth”). Absent evidence of some output restriction from a challenged practice, there is no reason to conclude that output restrictions are anti-competitive, a point that Dr. Evans and Dr. Schmalensee presented together in an amicus brief in *Ohio v. American Express*. Trial Tr. 1902:11–1903:6 (Schmalensee). Dr. Evans did not analyze output in this case, and has not shown any restriction on output—nor could he, given the dramatic increase in output since the App Store launched. Trial Tr. 1903:7–1904:5 (Schmalensee).

A. The number of game app developers and users has dramatically increased

214. As discussed above, the App Store reduced the barriers and costs associated with developing and distributing game apps. *See supra* § VII. As a result, developers flocked to the Apple ecosystem. Trial Tr. 2783:19–2787:6 (Schiller); DX-4192; Trial Tr. 3861:5–10 (Cook).
215. Drawn by the continual improvements to the App Store and Apple’s developer tools, *see supra* § VIII, that growth continued year-over-year. Trial Tr. 2759:9–17 (Schiller). Today, there approximately 1 million members in the Apple Developer Program (and over 30 million registered iOS developers). Trial Tr. 2759:14–17, 2760:10–15 (Schiller). Apple’s Developer Relations, including Human Review, works with developers and provides support to get apps into the App Store, with result being that in the last year, 150,000 developers submitted an app to the App Store for the first time. Trial Tr. 1109:12–1110:8 (Kosmynka).
216. There was similar growth among App Store customers. The App Store crossed 500 million cumulative App Store Customers in 2014. DX-3734.022. And by the end of 2015, there were 650 million customers who transacted on the App Store. DX-4526.027. That growth

also has continued: Today there are almost 1 billion customers worldwide and over 500 million weekly store visitors. Trial Tr. 2846:6–10 (Schiller).

217. In Mr. Sweeney’s understated words, “the number of apps increased” from 2010 to 2020, competition “grew dramatically.” Trial Tr. 91:4–5 (Sweeney).

B. The number of game apps available on the App Store has dramatically increased

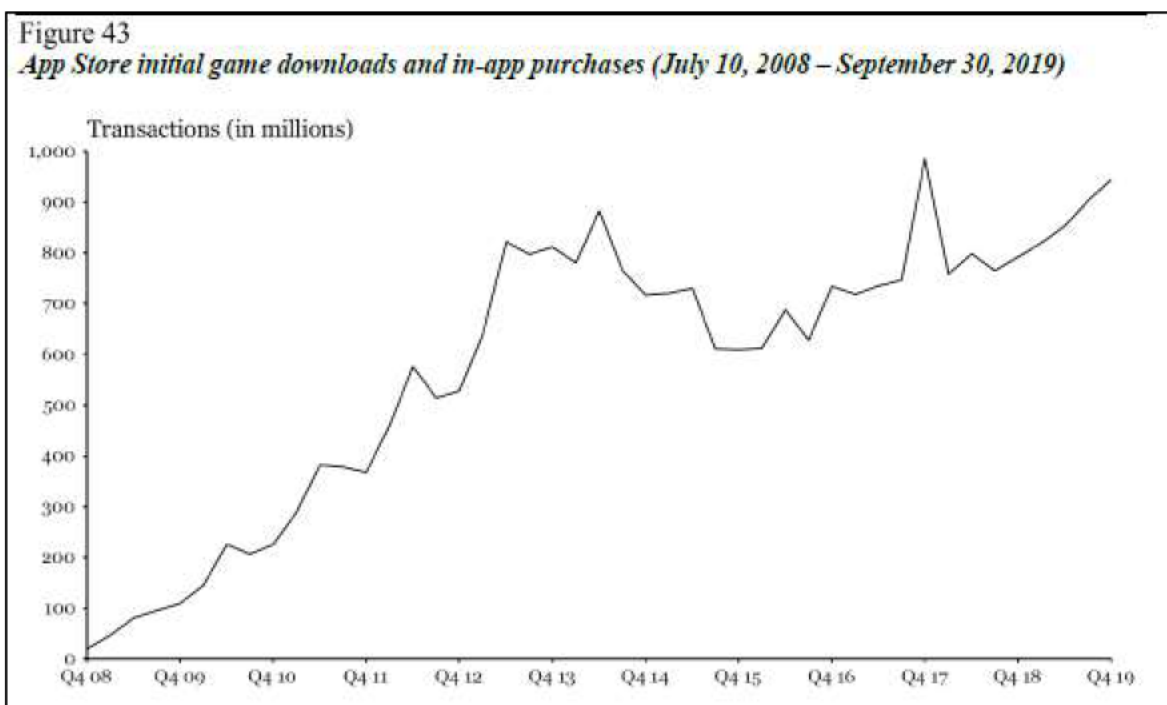
218. Alongside this growth in developers and consumers, the App Store has overseen an exponential proliferation in the availability of apps. Trial Tr. 2845:22–24 (Schiller) (iPhone users downloaded over 1.8 billion apps by September 2009); Trial Tr. 2846:11–12 (Schiller) (the App Store currently has approximately 2 million apps available to iPhone users); Trial Tr. 3860:17–3861:4 (Cook).
219. At launch, the App Store’s U.S. storefront offered 452 third-party apps (131 of which were games) by 312 distinct developers. Trial Tr. 2085:21–23 (Hitt); Ex. Expert 6 ¶ 182 (Hitt). In the App Store’s first year, the number of available apps grew to over 75,000. DX-4608.008. This growth was particularly pronounced among “gaming and entertainment titles.” *Id.*
220. By contrast, in September 2009, users of Sony PSPs could access 607 game titles and users of Nintendo DS’s could access 3,680 titles; iOS users had access to 21,178 game titles on the App Store. DX-4608.008.
221. This growth continued. By 2014, there were over 1,000,000 apps on the App Store. DX-3734.024. By 2015, there were over 1.4 million apps available on the App Store. Ex. Expert 12 ¶ 21 (Malackowski). And by 2020, there were over 1.8 million apps available on the App Store. *Id.*; *see also* Trial Tr. 3633:3–13 (Malackowski) (describing “steady, consistent, significant growth”). Games remain a significant share, with over 300,000 game apps available in the 2019 fiscal year. Trial Tr. 2085:21–23 (Hitt); Ex. Expert 6 ¶ 182 (Hitt); *see also* Trial Tr. 3225:1–12 (Schmid) (“Games are the biggest category in the App Store.”).
222. While the App Store generated growth in apps of every kind, free apps in particular became more prevalent. Trial Tr. 2767:8–17 (Schiller). At launch, about 32% of apps on the App Store were free. Ex. Expert 6 ¶ 169 (Hitt). As a result, developers shifted away from paid-to-download game apps toward free-to-download game apps (with or without in-app purchases). Trial Tr. 2767:8–17 (Schiller); Trial Tr. 2095:14–21 (Hitt); Ex. Expert 6 ¶¶ 9, 169, 269 (Hitt).
223. In 2013, more game apps were completely free—meaning both free-to-download and offering no in-app purchases—than pay-to-download. Ex. Expert 6 Fig. 38 (Hitt). By the end of 2019, 66% of game apps were free-to-download and offered no in-app purchases and about 25% were free-to-download with in-app purchases. *Id.* Users now have to pay to download less than 10% of game apps. Trial Tr. 2095:10 (Hitt); Ex. Expert 6 ¶ 169 (Hitt).

C. The number of game app transactions on the App Store, and amount of revenue generated from those transactions, have dramatically increased

224. Similarly, the total number of digital game transactions on the App Store—and the revenues earned by developers on the App Store—have dramatically increased over time. Trial Tr. 2769:7–18 (Schiller) (developers earned over \$400 billion in physical goods transactions in 2019); Trial Tr. 1903:19–1904:5 (Schmalensee); Trial Tr. 2081:10–24 (Hitt); Trial Tr. 2366:2–7 (Evans) (Dr. Evans agreeing with Dr. Hitt that there had been “incredible growth” on the App Store); Ex. Expert 6 Fig. 43 (Hitt).

224.1 By September 2009, there were 1.8 billion app downloads. DX-4608.001. By the App Store’s fifth birthday, it had crossed 50 billion app downloads. DX-3734.015. App downloads have continued to accelerate in the years since. Ex. Expert 6 Fig. 43 (Hitt).

224.2 The number of game app transactions—both downloads and in-app purchases—has grown in similar fashion. In the first year after the App Store’s launch, there were approximately 250 million game app transactions. Ex. Expert 6 Fig. 43 (Hitt). By the 2013 fiscal year, the two top game apps generated 190 million downloads themselves (each beating out the Google Maps, Facebook, and Instagram apps). DX-3734.028. In the 2019 fiscal year, the number of initial game downloads and game transactions totaled 3.52 billion:

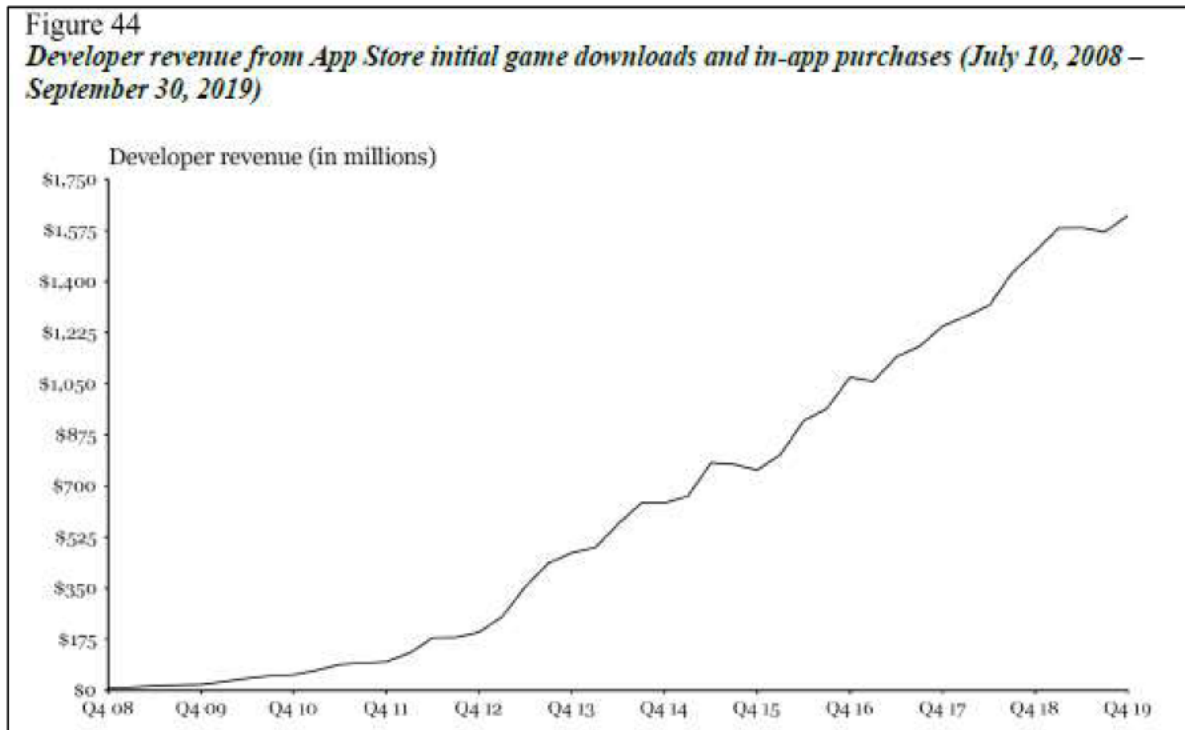


DX-4810.001; *see also* Ex. Expert 6 fig. 43 (Hitt).

224.3 Since its inception, the App Store also has generated enormous revenue for developers. Developers earned about \$8.5 billion in 2010–2013. DX-3734.016.

By 2016, \$44 billion had been paid to developers. DX-4526.010. And developers earned even more on apps and transactions for which Apple charged no commission. Trial Tr. 2769:7–18 (Schiller) (developers earned over \$400 billion in physical goods transactions in 2019 alone).

224.4 Game app developers have enjoyed the same revenue trend:



Ex. Expert 6 fig. 44 (Hitt). This increase in revenue is partially attributable to the fact that developers have been charging higher prices for in-app transactions, indicating that developers are creating more value for consumers. Trial Tr. 2110:9–2111:18 (Hitt).

224.5 Thus, the App Store business model has helped power industry-wide growth. Trial Tr. 2083:8–11 (Hitt). Yet the total output of digital game transactions through the App Store has far outpaced the industry: While revenue from digital game transactions grew around 448% between 2010 and 2018, revenue from game app transactions on the App Store grew by **more than 2600%** during the same period. Trial Tr. 2081:10–2082:5, 2083:8–11, 2107:20–2108:15 (Hitt); Trial Tr. 2126:16–19 (Hitt) (“The figure I recall is 62 percent of all revenue in the App Store relates to game transactions.”); Ex. Expert 6 ¶ 185 (Hitt). There is no evidence that revenue would have grown by more in Dr. Evans’ “but-for world,” and Dr. Evans attempted no such analysis. Trial Tr. 2233:11–2234:15 (Hitt).

224.6 iOS is more profitable for developers than Android. Trial Tr. 401:5–402:3 (Simon) (developer testifying that, as relates to in-app purchases alone, developer earned

more than 5 times as much revenue through Apple in-app purchase than Android on a percentage basis of developer's total revenue).

225. Sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. Ex. Expert 6 ¶¶ 186–90 (Hitt). For example, the number of iPhones sold in the U.S. has grown from 9.7 million in 2009 to [REDACTED] in 2019 (in which Apple also sold [REDACTED] iPads). Ex. Expert 6 ¶ 187 (Hitt). The total number of U.S. iPhone users has similarly grown from 44.5 million to 101.9 million between 2012 and 2018. Ex. Expert ¶ 6 188 (Hitt).

D. The quality of apps and game apps available on the App Store has improved

226. Not only has the quantity of available apps grown, the quality of those apps also has improved. See Trial Tr. 3633:25–3634:11 (Malackowski). As discussed above, Apple's innovations have improved the ability of iOS mobile devices to run high-end game apps. See *supra* § VIII. Dr. Evans agreed that Apple earns more revenues if it provides an increase in quality that allows developers to sell more to users. Trial Tr. 1683:12–25 (Evans). These innovations have enabled high-end “AAA” games to run on iOS mobile devices. Trial Tr. 2893:19–2894:14 (Schiller); Trial Tr. 633:5–15 (Wright); Ex. Expert 6 ¶ 194 (Hitt). Indeed, the App Store has long attracted the “hot title[s]” from “[l]eader[s] in the entertainment industry,” including major developers like Ubisoft and Electronic Arts. DX-4608.008, .011. And many games that previously would have been available on consoles and PCs have been released—with great success—on the App Store. Trial Tr. 2894:6–14 (Schiller); Ex. Expert 6 ¶ 194 (Hitt). These games run the gamut, ranging from content creation games like Minecraft to tower-defense games, board-game adaptations, resource-management simulators, console game adaptations, and more. Ex. Expert 6 ¶ 194 (Hitt).
227. By every conceivable measure, Apple's business model succeeded in eliminating the major frictions that existed in the mobile phone business in the 2000s, driving explosive growth through positive feedbacks between developers and users. Trial Tr. 3862:11–25 (Cook); Ex. Expert 8 ¶¶ 16, 127–30 (Schmalensee); see also Trial Tr. 934:7–9 (Fischer) (“The feedback that I have received and seen and surveys and things [regarding the 2017 redesign] have been overwhelmingly positive. Especially from smaller developers.”). And Apple has generated this output at rates far surpassing competitors. Trial Tr. 3862:11–25 (Cook).
- 227.1 At trial, Epic introduced documents where Apple executives referred to creating “stickiness” in Apple products and its ecosystem. But these documents show only that Apple wanted to create quality products with loyal customers, and to cross-sell those products to its customers. Epic follows the same approach in establishing the *Fortnite* “metaverse.” DX-3955.022 (identifying a goal to “[a]ttract and retain players in the Epic ecosystem between Epic and Partner games”). One goal of EGS, for example, is to convert consumers into *Fortnite* players. DX-3955.021.

X. The App Store Competes With Other Platforms For Game App Transactions

228. Every day, Apple competes against many rivals and is constantly pushing to improve Apple's devices, software, services, and other offerings. Trial Tr. 3865:6–3867:5 (Cook). The App Store and iOS ecosystem are not exceptions. Trial Tr. 3865:23–2867:5 (Cook).

A. The App Store launched in a marketplace that already contained numerous rivals

229. The App Store competes in an increasingly crowded market of game app distribution platforms. Trial Tr. 2748:1–13 (Schiller); Trial Tr. 91:4–5 (Sweeney). This includes at least four sources of competition for game app distribution: Online mobile app transaction platforms (e.g., Google Play); online transaction platforms focused on game distribution (e.g., Steam); developers' own stores that directly distribute their games (e.g., Epic Games Store); consoles (e.g., Sony PlayStation and Microsoft Xbox); and, most recently, streaming game services (e.g., Nvidia GeForce Now). Trial Tr. 95:23–96:1, 135:21–24, 138:23–25, 177:23–178:14 (Sweeney); Trial Tr. 637:18–24, 642:19–643:5 (Wright) (stating that mobile is part of the gaming industry); DX 5532.011 (Microsoft 10-K); Trial Tr. 2748:7–13, 2867:9–20 (Schiller); Trial Tr. 3240:1–7 (Schmid) (“We [Apple] compete with Google Play and the other many Android marketplaces. We compete with the consoles, so Switch, PlayStation, Xbox. We certainly compete with PC and the – the PC stores like Epic Games Store or Steam. And now more and more we’re competing with the cloud gaming and – and the many companies that are getting involved in cloud gaming.”).
230. The first successful on-device platform for mobile devices, Handango, was launched for devices such as BlackBerry and PalmPilot. Trial Tr. 2726:1–6 (Schiller); Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee).
231. Steam, launched in 2003, was the first online platform focused on game distribution to gain major success. Trial Tr. 173:13–74:25 (Sweeney). In 2005, Steam “invited select developers to join what they would call their Launcher . . . and they basically created what was the first significant PC store that was an application on PC.” Trial Tr. 1202:5–1204:6; 1248:12–22 (Allison). As the first mover, Steam pioneered digital distribution on PC and enjoyed “a real boom in both Steam’s business and just PC gaming and digital gaming in general.” Trial Tr. 1202:5–1204:24; 1248:12–22 (Allison). Steam “is a dominant player in the space and was in 2018 with 70 to 85 percent market share depending on how you define the space.” Trial Tr. 1201:23–1202:4 (Allison).
232. Other PC-focused digital distribution platforms followed on the heels of Steam’s success. GameJolt, iPlay, Direct2Drive, Windows Marketplace, GamersGate, and Kongregate all launched between 2003 and 2007. Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee). In addition, Microsoft launched Xbox Live Marketplace in 2005, Sony launched the PlayStation Store in 2006, and Nintendo launched the Wii Shop Channel that same year. PX-2476.6 (“[REDACTED]”); Trial Tr. 546:7–15 (Wright); Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee). Most of these platforms, like Steam, charged a 30% commission. Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee).

233. Moreover, users could (and still can) access games through web applications on their web browser, such as Safari. *See supra* § III.B.

234. Thus, the App Store entered a marketplace with multiple established competitors and competing services. Trial Tr. 2725:23–2726:13 (Schiller) (describing digital transaction platforms Steam and Handango, as well as physical distribution).

B. Competition for game app transactions has become more intense since the App Store’s launch

235. The marketplace for game app distribution has become more crowded since the App Store launched. Trial Tr. 2748:1–13 (Schiller); *see also* Trial Tr. 2772:13–17 (Schiller); PX-0888 (describing competitor commerce models on Xbox, Nintendo, and PlayStation). Mr. Sweeney agreed that the App Store is one of several “competing platforms,” along with the PlayStation and Xbox, with respect to cross-platform play for *Fortnite*. Trial Tr. 236:19–237:2 (Sweeney); DX-3125.005.

236. Among these, Google announced the Android Market in 2008 (which later became Google Play in 2012). Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee). Nokia and Samsung launched their Ovi Store and Galaxy Apps Store, respectively, the next year. Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee). In 2011, Nintendo launched its eShop for its 3DS device. Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee).

237. [OMITTED]

238. Apple has also benchmarked the App Store against Android Market, Google Play, and other competitors. A 2017 presentation listed Google Play in the “Competition” section, along with Facebook Messenger games, publishers, platform marketplaces, and social platforms. DX-4399.046–.054.

238.1 Dr. Cragg admitted that he gave no consideration to the perception of market participants, expressed in business documents identifying their competitor. Trial Tr. 2322:6–2333:2 (Cragg).

239. Apple understood that other Android marketplace platforms were competitive forces as well. Trial Tr. 2866:1–20 (Schiller). As but one example, when Amazon launched its Android app marketplace, Mr. Schiller wrote internally: “[T]he ‘threat level’ is not ‘medium’, it is ‘very high.’” DX-4447.001. And at the Fourth Annual App Store Global Management Team Summit, Apple spent considerable time discussing competition from Google, Samsung, and Amazon. DX-3734.041–.053.

240. Apple also competes against PC and console game app platforms such as Microsoft’s Xbox and Sony’s PlayStation. Trial Tr. 2748:10–12 (Schiller). As early as 2009, Apple executives discussed Sony’s PSP Go as “a key competitor” to the iPhone “because Sony also relaunched the PSN [PlayStation Network] Store.” DX-4389.001. And Apple executives discussed, tracked, and sought to improve the company’s position within the broader gaming industry that included mobile, PC, and console platforms. DX-4178.008.

241. The appeal of mobile gaming attracted new competitors. For example, Nintendo introduced the Switch—a quasi-mobile device—in 2017, and the eShop became the Switch’s online store. Trial Tr. 696:8–11 (Grant); Ex. Expert 6 ¶¶ 190 & fig. 1 (Hitt). Epic employees similarly recognized that “adding new platforms like mobile and Switch” affected sales on other platforms. DX-3867.001.
242. Similarly, other companies introduced new tablet devices, such as Amazon’s Kindle Fire and the Samsung Galaxy Tab. Trial Tr. 697:10–13 (Grant).
243. In addition, many other developers launched major digital distribution platforms for their own and others’ titles. Among others, Ubisoft launched Ubisoft Connect in 2012; Bethesda launched Bethesda.net in 2016; and, as discussed below, Epic launched the Epic Games Store in 2018. Ex. Expert 8 ¶ 41, Ex. 1 (Schmalensee); *see also infra* § XI.A.
244. Recognizing that Apple faced competition from all sides, an internal analysis from 2017 estimated that the App Store’s market share—in a worldwide “games business” including platforms for game transactions on mobile, console, and PC devices—was about 27% in the worldwide “games business.” DX-4178.008.
245. This field has only become more crowded as, most recently, several online, cloud-based streaming game platforms have been introduced. Trial Tr. 135:21–36:5 (Sweeney); Trial Tr. 3866:14–22 (Cook). These include Google Stadia, Nvidia’s GeForce Now, Microsoft Xbox Cloud Gaming, and Amazon’s Luna. Trial Tr. 2119:20–2120:14 (Hitt); Trial Tr. 178:7–14, 256:16–25 (Sweeney); Trial Tr. 422:1, 442:5–12 (Patel); Ex. Expert 6 ¶ 144 (Hitt); Ex. Expert 6 ¶ 120 (Schmalensee). Mr. Sweeney stated that at least some consumers can have a “good experience” on these streaming services, and that some users “select in” to them instead of other gaming platforms. Trial Tr. 177:18–78:6 (Sweeney); Trial Tr. 471:10–472:21 (Patel). Microsoft has recognized in its 10-K that its Xbox Live services face competition from Amazon, Apple, Facebook, Google, Tencent, and these new “game streaming services.” Trial Tr. 647:5–13 (Wright).
- 245.1 Google Stadia is a game streaming service publicly launched in November 2019 and available on iOS through web streaming. Trial Tr. 256:16–25 (Sweeney); Trial Tr. 901:19–21 (Fischer); Ex. Expert 6 ¶ 144 (Hitt). Stadia offers a subscription model that provides access to a library of games. Trial Tr. 902:8–11 (Fischer).
- 245.2 Nvidia GeForce Now publicly launched in February 2020 and is accessible through the Safari web browser on iOS or through the GeForce Now client. Trial Tr. 137:12–16 (Sweeney); Trial Tr. 422:12–15 (Patel). It allows users to stream games previously acquired or purchased from digital game distribution platforms (such as Steam or EGS). Trial Tr. 425:4–11, 464:11–465:1 (Patel). The GeForce service played on iOS as a web-based service has received mostly positive reviews and has performed excellently even on older devices, for which Apple receives no commission or payment. Trial Tr. 471:25–472:21, 475:5–15 (Patel). By the third quarter 2020, GeForce had 5 million users with a goal of doubling that within a year. Trial Tr. 458:6–18. GeForce also has doubled its price for new users. Trial Tr. 459:18–460:5. Latency and the other issues discussed by Mr. Patel of Nvidia

do not prevent consumers from signing up and enjoying the GeForce service. Trial Tr. 469:18–23 (Patel). Mr. Patel also raised the issue of the need for an Internet connection and capacity issues for streaming, but those issues arise regardless of whether GeForce is offered as a native app or a web app. Trial Tr. 456:15–24, 473:24–474:13 (Patel). With expanding bandwidth over the past five years, the overall streaming experience is now vastly better. Trial Tr. 470:4–15 (Patel). Nvidia also continues to expand its data center capacity to manage its users. Trial Tr. 460:8–461:3 (Patel). At bottom, GeForce “generates some of the best graphics out there.” Trial Tr. 466:18–24 (Patel). GeForce does not implement transactions between developers and users, which instead occur through the digital game distribution platforms where the games are hosted. *See* Trial Tr. 476:12–19 (Patel) (“Nvidia and GeForce Now are not in the middle of that transaction” and receive no commission and instead “all of that revenue” goes to the developer).

- 245.3 Microsoft Xbox Cloud Gaming with Xbox Game Pass Ultimate (formerly known as Project xCloud) is a subscription-based streaming service that allows users to stream games to their Android devices. Trial Tr. 565:20–67:6 (Wright). Xbox Cloud Gaming became available for selected Android devices and was recently launched on iOS, after substantial support from Apple engineers, in beta version. Trial Tr. 567:4–19, 609:22–11:7 (Wright); Ex. Expert 8 ¶ 120 (Schmalensee). Press accounts say that Xbox Cloud Gaming is “a super-solid experience on PC” as well as on “iOS” through the Safari browser. Trial Tr. 611:21–12:1 (Wright). Ms. Wright states that it is a “great sign” for the prospects of Xbox Cloud Gaming “that the beta is expanding.” Trial Tr. 613:11–12 (Wright). Epic does not support Xbox Cloud Gaming because it views “Microsoft’s efforts with xCloud to be competitive with Epic’s “own PC offerings.” Apple Ex. Depo. 2 at 106:19-107:6 (Kreiner).
- 245.4 Amazon Luna is a game streaming service available on iOS through web streaming. Ex. Expert 6 ¶ 144 (Hitt); Trial Tr. 619:1–2 (Wright) (“Amazon . . . saw what was happening and built a web app.”).
- 245.5 Steam also offers a variety of iOS applications through the App Store that allow Steam customers to manage their account and even stream games from their Steam library to their iOS device. Trial Tr. 1843:7–19, 1844:10–14 (Athey). PlayStation and Xbox have similar apps in the App Store that allow customers of those consoles to stream games from their consoles in order to play on their iOS device. Trial Tr. 1851:1–23 (Athey).
- 245.6 There are real distinctions between game streaming services and music or video streaming services. From the outset of iOS, media like music or video has been managed in collections as part of apps because the experiences of one song versus another song, or one video versus another video, are not different experiences from a user’s point of view. Trial Tr. 3429:12–3430:8 (Federighi). “They play the same way” and “don’t require unique security permissions.” *Id.* And a single episode of a show does not require the “30- to a hundred hour relationship a user may have with a given game title that they’re coming back to repeatedly.” *Id.*

246. [OMITTED]

247. Accordingly, Apple competes for developers and users across these platforms. Trial Tr. 2748:6–13 (Schiller). Consumers have a choice of devices and transaction platforms through which to acquire, modify, and play games. Trial Tr. 2748:14–24 (Schiller); Ex. Expert 8 ¶¶ 122–26 (Schmalensee). Thus, Apple competes to provide a platform that is user-friendly, reliable, safe, private, and secure. Ex. Expert 8 ¶¶ 122–26 (Schmalensee). Mr. Sweeney agreed that “what is on a particular store is part of the competitive landscape among different stores in which customers make decisions between stores based on the quality, selection, and other policies of stores.” Trial Tr. 261:19–23 (Sweeney). Similarly, developers also have a choice among the distribution channels, including various transaction platforms, through which to distribute their apps to consumers. Trial Tr. 2130:5–7 (Hitt); Trial Tr. 2867:9–20 (Schiller) (describing the App Store’s competition with Steam); Ex. Expert 8 ¶¶ 122–26 (Schmalensee). And Apple likewise must make its platform attractive to developers. Ex. Expert 8 ¶¶ 122–26 (Schmalensee).

XI. After Many Years Profiting From Its Relationship With Apple, Epic Flagrantly Breaches Its Agreements

A. Epic’s business model

248. Epic is a video game developer founded in 1991. Trial Tr. 89:19, 112:18–25 (Sweeney). It was recently valued at \$28.7 billion, with Mr. Sweeney as the controlling shareholder and chairman of the Board of Directors. Trial Tr. 165:22–66:1, 179:7–8 (Sweeney). Tencent owns about thirty-seven percent of Epic Games, with two board seats, and Sony also owns about 1 to 2 percent of Epic. Trial Tr. 179:2–6, 179:21–80:3 (Sweeney).

248.1 At the start, Epic distributed games for itself and others. Trial Tr. 172:3–8 (Sweeney).

248.2 Around 1998, Epic moved to a different distribution model. Trial Tr. 172:21–24 (Sweeney). It signed a publishing deal Trial Tr. 172:25–73:3 (Sweeney).

248.3 During the mid-2000’s, Epic’s business model shifted again as the company became a multiplatform developer, developing console games in addition to PC games. DX-3710.005–.006.

249. Developing video games remains Epic’s primary business today. Trial Tr. 93:22–94:17, 116:6–12. (Sweeney). There is no industry definition of what constitutes a game, Trial Tr. 11:40 (Kosmynka), although witnesses agreed that games do not need to be competitive or keep score in order to qualify as such, Trial Tr. 647:24–25 (Wright) (describing Minecraft as a game even though it is not competitive). On the App Store, developers choose from 27 categories of apps, including games, which are defined as “Apps that provide single or multiplayer interactive activities for entertainment purposes.” DX-5552. Epic sells these games to customers directly and through several game transaction platforms. Trial Tr. 93:22–94:17, 111:13–17, 116:6–12. (Sweeney). Although some of Epic’s games, like *Fortnite*, offer a variety of noncompetitive experiences to consumers, all of those experiences take place within the context of the game itself. Trial Tr. 324:14–23

(Sweeney); Trial Tr. 1246:7–1247:18 (Allison); Trial Tr. 1354:1–1376:15 (Weissinger) (explaining the various game modes within *Fortnite*, all of which are and/or contain games).

249.1 Epic’s games have included *Fortnite*, Battle Breakers, Spyjinx, and the Infinity Blade series. Trial Tr. 89:22–90:5 (Sweeney); Trial Tr. 664:13–14 (Grant).

249.2 In *Fortnite*’s lifetime, it “has had over 400 million users.” Trial Tr. 100:5–7 (Sweeney). Up until August 2020, *Fortnite* was available on Microsoft Windows, Mac Store, PlayStation 4, Xbox One, Nintendo Switch, Google Play, the Samsung Galaxy Store, Epic Games Store, and the App Store. Trial Tr. 133:5–11, 176:18–21 (Sweeney). Indeed, “the magic of *Fortnite* is the ability to play together with people you know . . . even if you are in different places and on different devices.” Trial Tr. 107:14–18 (Sweeney). Although Epic attempted at trial to describe various features of *Fortnite*—such as its “Party Royale” mode—as something other than games, Epic’s online Beginner’s Guide categorizes all of *Fortnite*’s content into four major “game modes.” DX-5536. Matthew Weissinger, too, confirmed that Party Royale (and another feature, Creative Mode) include gaming elements. Trial Tr. 1363:1–1364:1, 1373:22–1374:12, 1439:6–13 (Weissinger). And Mr. Sweeney confirmed that in all modes, players participate as their *Fortnite* avatar. Trial Tr. 324:14–23, 326:2–11 (Sweeney).

249.3 *Fortnite* primarily relies upon a “freemium” model: The game is largely free to download and play, but certain additional in-game features and enhancements can be purchased. Trial Tr. 187:15–88:3, 226:18–19 (Sweeney). Epic primarily generates revenue through in-app purchases—selling so-called “V-Bucks,” a digital currency that can be used to obtain items in *Fortnite*. Trial Tr. 189:9–11 (Sweeney). V-Bucks can also be purchased directly from Epic’s website. Trial Tr. 298:21–23 (Sweeney).

249.4 Epic sells V-Bucks to consumers in various bundles and packages. Trial Tr. 190:6–9 (Sweeney). Epic sells V-Bucks in various quantities at increasing prices: 1,000 V-Bucks for \$9.99, \$24.99 for 2,800 V-Bucks, and so on—all the way to 13,500 V-Bucks for \$99.99. DX-3774.009 (outlining Epic’s U.S. V-Buck prices in July 2020). After Epic implemented its hotfix on iOS, it dropped V-Bucks prices by 20% for purchases made through Epic’s direct payment option on iOS and Google Play as well as for purchases on every other platform through which *Fortnite* was offered (i.e., 1000 V-Bucks cost \$7.99, 5,000 now cost \$31.99, and 13,500 V-Bucks cost \$79.99). Trial Tr. 190:14–16 (Sweeney); DX-3774.009; *see also infra* § XI.K.

249.5 There is “no cost to a V-Buck . . . V-Bucks themselves don’t have a marginal cost.” Trial Tr. 190:14–16 (Sweeney).

249.6 Epic also monetizes *Fortnite* in ten other ways. DX-3691.008–.010.

249.7 First, in addition to V-Bucks, users can directly purchase *Fortnite* content, “typically in the form of bundles that contain combinations of V-Bucks, cosmetics

and other in-game content such as challenges.” DX-3691.008; Trial Tr. 190:6–19 (Sweeney); Trial Tr. 1300:5–7 (Weissinger); DX-4652.003.

- 249.8 Second, users “can subscribe to *Fortnite* Crew, a subscription” service offered by Epic. Trial Tr. 1357:17–25 (Weissinger); DX-3691.009. Epic began offering *Fortnite* Crew subscriptions in December 2020. Trial Tr. 1357:17–25 (Weissinger).
- 249.9 Third, one of *Fortnite*’s game modes, Save the World, is accessible only upon payment of an up-front fee (and also has in-app content available for purchase). DX-3691.009.
- 249.10 Fourth, Epic “generates revenue by selling *Fortnite* content outside of the game, typically in the form of redeemable codes sold through traditional retail and online stores.” DX-3691.009.
- 249.11 Fifth, Epic at times has generated revenue through in-game advertising or cross-promotions. DX-3691.010; *see also* Trial Tr. 1306:19–1307:7; 1311:7–1312:1 (Weissinger).
- 249.12 Sixth, Epic “has received revenue for providing third parties with promotional codes redeemable for *Fortnite* content.” DX-3691.010.
- 249.13 Seventh, “Epic has in the past entered into hardware bundle agreements with console makers,” through which “the console makers offered for sale a bundle containing their game consoles along with exclusive *Fortnite* cosmetics and V-Bucks, and Epic received a small portion of the revenue from each bundle sale.” DX-3691.010.
- 249.14 Eighth, “Epic has provided other partners with redeemable codes for exclusive *Fortnite* cosmetics and V-Bucks, and Epic was paid by the partner on a per redemption basis.” DX-3691.010.
- 249.15 Ninth, “Epic has entered into licensing agreements with brands through which it received the revenue from sales of in-game cosmetics featuring the licensed content as well as a small portion of the brand’s sales generated from *Fortnite*.” DX-3691.010.
- 249.16 Tenth, “Epic licenses *Fortnite* intellectual property to third parties to use in physical merchandise, such as toys, apparel, accessories and home goods. In some circumstances, such physical merchandise also may include a code that can be redeemed for *Fortnite* in-game content.” DX-3691.010.
- 249.17 In 2019 alone, *Fortnite* generated 87.9% of Epic’s revenue (\$3.709 billion out of \$4.221 billion in total revenue). DX-3795.009.
- 249.18 Epic’s game Houseparty is developed by a subsidiary of Epic. Trial Tr. 305:4–21 (Sweeney).

249.18.1 To be a game, the play does not need to be competitive. People play games all the time that are not competitive. Trial Tr. 327:13–16, 328:9–11 (Sweeney).

249.18.2 Epic’s entertainment functionality or other experiences on *Fortnite* involve players attending entertainment with their game avatars. Trial Tr. 324:14–23, 326:2–11 (Sweeney).

249.19 Epic has largely agreed to pay a 30% commission rate on all app transactions.

249.19.1 Epic has agreed to such a rate on all *Fortnite* transactions via the Microsoft Store, [REDACTED], Nintendo eShop, and Google Play, for example. DX-3582.004–.005; DX-3464.012, .027, .031; Trial Tr. 142:19–143:1, 161:13–15 (Sweeney); Trial Tr. 1349:14–23 (Weissinger).

249.19.2 Epic also agreed to pay a 30% commission rate on all *Fortnite* transactions via the PlayStation Store; however, it also agreed to make additional payments to Sony *above* this commission rate based on the amount of time that PlayStation users play *Fortnite* cross-platform. Apple Ex. Depo. 2 at 52:13–19 (Kreiner); DX-4519.003–.004; Trial Tr. 198:10–21, 238:1–238:5, 308:14–23 (Sweeney).

249.19.3 [REDACTED]
[REDACTED]
[REDACTED]. Trial
Tr. 205:13–18 (Sweeney); DX-4457; DX-3472.007. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] DX-4457.001. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Trial Tr. 211:16–20 (Sweeney). In
other words, Epic does not “pass on [those] savings to consumers.”
Trial Tr. 156:19–20 (Sweeney).

249.19.4 Epic also runs a publishing business that provides development and manufacturing funding for game developers with financial terms under which Epic first recovers all of its costs and then then splits remaining revenues 60/40 with the 40% share to the developer, or 50/50. Trial Tr. 306:6– 307:11 (Sweeney); *see also* Trial Tr. 1263:3–15 (Allison); DX-3993.025.

- 249.19.5 Other platforms with which Epic distributes *Fortnite* also require Epic to use the platform's payment solution. Apple. Ex. Depo. 2 at 76:5–8, 85:21–86:2, 94:23–95:10 (Kreiner).
- 249.19.6 Epic's head of marketing testified that he had never heard that paying a 30% commission to Apple on in app purchases in *Fortnite* inhibited Epic's ability to capture and retain users, or that Epic's marketing efforts would be more effective if Epic could distribute iOS apps outside of the App Store. Trial Tr. 1389:22–1393:9 (Weissinger).
250. The second component of Epic's business—run through its Swiss subsidiary (and non-party) Epic S.A.R.L. ("Epic International")—is the development and licensing of the Unreal Engine to other developers. Trial Tr. 724:11–16, 753:19–754:7 (Grant); DX-4022. The Unreal Engine can be used to develop games and other products. Trial Tr. 116:17–22, 162:5–12 (Sweeney); Trial Tr. 662:12–13 (Grant). Unreal Engine is a game engine used by developers and not consumers, and is not an app on the App Store. Trial Tr. 162:19–163:14 (Sweeney).
- 250.1 Epic International requires all developers that seek to use the Unreal Engine to enter into an End User License Agreement (EULA). DX-4022.
- 250.2 Epic International licenses Unreal Engine because it "owns" and "wish[es] to protect and retain [its] IP rights." Trial Tr. 754:13–19 (Grant). Epic also seeks to make a profit on Unreal Engine: It charges fees for certain paid content related to Unreal Engine, DX-4022.006–.007, and Epic International also charges a royalty on products that use any version of the Unreal Engine—typically 5% of gross revenue. DX-4022.007–.008 (§ 5); Trial Tr. 681:4–7 (Grant). In the past, developers were required to pay Epic International royalties after a particular product exceeded \$3,000 in revenue per quarter; in 2020, Epic changed its policy. DX-4022.007; Trial Tr. 754:20–755:4 (Grant). Now, Epic International is owed royalties after a product earns \$1,000,000 in its lifetime. Trial Tr. 681:4–7 (Grant).
- 250.3 Epic International thus profits in perpetuity from any success a developer experiences on a product using the Unreal Engine. DX-4022.008 ("The royalty will be payable under this Agreement with respect to each Product for as long as any Engine Code or Content (including as modified by you under the License) incorporated in or used to make the Product are protected under copyright or other intellectual property law."). As Epic's former CFO stated, this model ensures that if developers succeed, Epic "can participate in that success." Apple Ex. Depo 1 at 180:5–9 (Babcock). Epic International collects these royalties in perpetuity. Apple Ex. Depo. 5 at 30:7–8 (Penwarden).
- 250.4 In 2019, Unreal Engine generated about \$97 million in revenue for Epic International. DX-3795.009. Epic International enjoys a 100 percent gross margin on its "engine business." DX-3359.003.

251. The third and most recent component of Epic’s business is the maintenance of its own marketplace, called the Epic Games Store (EGS).
- 251.1 The EGS website markets games. The navigation tabs on the homepage—“games on sale,” “free games,” “new and trending,” “new releases,” “top sellers,” “top 20,” and “coming soon”—lead to compilations consisting entirely of games. Trial Tr. 1236:5–1238:10 (Allison). The “top news items” tab offers only news about games. Trial Tr. 1238:21–24 (Allison). The search bar prompts the user to a “search all games” (and not to “search all apps”). Trial Tr. 1238:11–19 (Allison). The “help” tab describes EGS’s consumers as “players.” Trial Tr. 1238:25–1239:5 (Allison). And the EGS “FAQ” describes EGS as a “curated digital storefront for PC and Mac” that is “designed with both players and creators in mind” and “focused on providing great games for gamers and a fair deal for game developers.” Trial Tr. 1239:15–1240:7 (Allison).
- 251.2 As of August 2020, the EGS website included (until late last year) exclusively game apps. Trial Tr. 117:19–25 (Sweeney) (“Q. All right. Mr. Sweeney, in August of 2020, did the Epic Games Store host any nongame apps? A. Yes. Since its inception, the Epic Games Store has hosted the Unreal Engine. THE COURT: Anything beyond that? THE WITNESS: No, not until about four months ago.”); Trial Tr. 121:19–25, 123:10–13, 124:15–24 (Sweeney). It did not introduce any non-gaming apps until Spotify—also a member of the Coalition for App Fairness organized by Epic in connection with this litigation—was added to EGS in late 2020, after the initiation of this lawsuit. Trial Tr. 262:19–263:11 (Sweeney); Trial Tr. 1243:3–11 (Allison). Other non-gaming apps, like iHeart Radio, were added just days before trial. Trial Tr. 265:7–11 (Sweeney).
- 251.3 Although EGS links to it, the Unreal Engine has its own website with its own domain name. Trial Tr. 1239:8–13 (Allison).
- 251.4 Epic introduced EGS in 2018. Trial Tr. 125:10–13 (Sweeney). Although Epic urges in this lawsuit that Apple must distribute third-party app stores through the App Store, EGS did not itself distribute any third-party app stores until approximately April 22, 2021, just a few days before trial. Trial Tr. 263:22–265:4 (Sweeney).
- 251.5 Like other platforms, EGS uses a commission model. Trial Tr. 125:9–12 (Sweeney). Epic usually charges 12% of gross revenue. Trial Tr. 126:1–3 (Sweeney). The commission EGS charges is a below-cost price. Trial Tr. 2326:25–2327:5 (Cragg).
- 251.6 Epic acknowledges that this commission is not merely a “payment processing” fee. The 12 percent fee is principally for access to Epic’s customers, Trial Tr. 1271:21–24 (Allison), but also is intended to cover all of Epic’s variable operating costs associated with selling incremental games to customers. Trial Tr. 126:9–11 (Sweeney); Epic’s Findings of Fact ¶ 406.b. It covers various services to game developers, including “hosting, player support, marketing of their games, and

handling of refunds,” “a supporter/creator marketing program,” and “social media for game launches, video promotions, . . . featuring at physical events, such as E3[,] [a]nd sponsorships of the video games.” Apple Ex. Depo. 2 at 242:9–243:13 (Kreiner). The commission is thus “tied into these broader ecosystem benefits that [Epic] provide[s] to [its] developers,” *id.* at 243:19–22, and intended to cover the full “cost of operating the service,” “the actual distribution cost, the internet bandwidth cost, the . . . cost of maintaining it.” Apple Ex. Depo. 6 at 110:4–25 (Rein); *see also* Trial Tr. 1224:4–1225:7; 1232:5–13 (Allison).

251.7 From EGS’s launch to December 2019, Epic collected its commission through its own payment mechanism, which it required developers to use for all game purchases and in-game purchases. Trial Tr. 1221:11–1222:16 (Allison).

251.8 EGS is not currently profitable at a 12% commission and will not be profitable for at least several years, if ever. Trial Tr. 126:12–27:6 (Sweeney); Trial Tr. 1230:3–4 (Allison); Apple Ex. Depo 2 at 244:2–5, 256:12–16 (Kreiner); Trial Tr. 2327:3–5 (Cragg); DX-3712.017. And even then, EGS is expected to have a negative overall earnings in the hundreds of millions of dollars through at least 2027. Trial Tr. 276:8–277:9 (Sweeney). Part of that is attributable to the fact that in order to persuade developers to distribute exclusively through EGS, Epic was forced to offer minimum guarantees totaling hundreds of millions of dollars. Trial Tr. 1260:22–1262:8 (Allison); *see also* DX-4638 (describing negative community reaction to exclusivity deal).

B. Epic has been an Apple developer for over a decade

252. In 2010, agreed to and signed a Developer Agreement with Apple. Trial Tr. 166:16–167:2 (Sweeney). Epic International subsequently signed a Developer Agreement and DPLA (for the account associated with Unreal Engine). Trial Tr. 166:16–67:2 (Sweeney); Trial Tr. 724:23–725:21 (Grant). At the time of the signing of these contracts, Mr. Sweeney had his lawyers review them, and he discussed the terms with his lawyers. Trial Tr. 169:6–16 (Sweeney). Mr. Sweeney understood then that the contracts (1) required Epic to pay a commission on in-app purchases; (2) prohibited Epic from putting a store within the App Store; (3) prohibited Epic from sideloading apps on to iOS devices; and (4) required Epic to use Apple’s commerce technology for any payments. Trial Tr. 168:21–69:19 (Sweeney). Nonetheless, Epic “chose to enter into those contracts.” Trial Tr. 169:13–19 (Sweeney). According to Mr. Sweeney, Epic did not have a formal business dispute with Apple or raise major objections or have existential-level concerns about the App Store’s contract terms at the time. Trial Tr. 90:9–12, 169:4–70:9 (Sweeney). There has been no material change in the terms of Epic’s agreement with Apple, nor in Apple’s business design, since 2010. *See infra* § XVI.D.

252.1 Epic signed its contracts two years after Steve Jobs’ comment to a reporter that Apple did not “intend to make money off the App Store.” Trial Tr. 1539:23–1540:2 (Evans). Epic presented no evidence at trial that it relied on this statement in any way.

253. Epic released three iOS games before *Fortnite*, and Apple featured each of them at major events. Trial Tr. 937:12–20 (Fischer); Apple Ex. Depo 3 at 117:7–24 (Malik). These events allowed Epic to make use of Apple’s brand.
- 253.1 This began with Epic’s first iOS game, *Infinity Blade*, in 2010. DX-4455.001 (email thread about meeting between Epic and Apple to discuss *Infinity Blade* under codename “Sword”); DX-3710.006. Epic released *Infinity Blade* for iOS because it thought that there was a bright future ahead for games in “amazing 3D” on mobile platforms, and there were a large number of iOS users. Trial Tr. 89:22–90:5, 90:24–91:3 (Sweeney).
254. Epic debuted *Fortnite* on a number of platforms—including Windows, Mac, Xbox One and PlayStation 4—in 2017. Trial Tr. 188:10–12 (Sweeney); Ex. Expert 6 Fig. 6 (Hitt). In 2017, Epic released “Battle Royale”—a free-to-play game mode with features available for in-app purchase. Trial Tr. 188:2–21 (Sweeney). With Battle Royale’s success, *Fortnite* quickly “became more about Battle Royale” and, thus, a primarily “free-to-play game.” Apple Ex. Depo. 2 at 169:10–11 (Kreiner). The success of *Fortnite* has been profitable for both Epic and its partners—for instance, as Ms. Wright testified, the Epic-Microsoft partnership generates hundreds of millions of dollars for both parties. Trial Tr. 590:5–9, 592:12–17 (Wright).
255. In early 2018, Epic and Apple arranged for the release of *Fortnite* on iOS. Trial Tr. 937:23–938:10 (Fischer). By that time, *Fortnite* was “doing incredible” and “basically a cultural phenomenon” by the time of iOS launch. Trial Tr. 1337:19–21 (Weissinger).
- 255.1 From the early days, Epic supported cross-platform scenarios to allow users of different devices to play *Fortnite* with one another. Trial Tr. 106:23–24, 196:18–22 (Sweeney). Cross-platform scenarios occur where games on one platform access “content, subscriptions, or features” that were acquired on other platforms or on a developer’s website. PX-2790.12–.12 (§§ 3.1.1, 3.1.3).
- 255.2 But cross-play was not permitted on all platforms, including Microsoft’s and Sony’s. Trial Tr. 107:2–10, 234:3–11, 252:22–253:15 (Sweeney). Epic therefore had significant discussions with Microsoft and Sony to enable broader cross-platform play. Trial Tr. 234:9–238:12, 253:16–255:16 (Sweeney); DX-3125. Indeed, Epic threatened to sue Sony to allow cross-play. DX-3125.007.
- 255.3 Epic did not encounter such difficulty with Apple. Before launching *Fortnite* on iOS, Epic sought to leverage Apple’s significant interest in “the mobile version of [*Fortnite* Battle Royale]” to obtain Apple support in operationalizing cross-play capabilities and secure marketing support from Apple. DX-3448.001. Apple obliged: Before Epic debuted *Fortnite* on iPhone in March 2018, Apple had operationalized cross-platform play. Trial Tr. 232:18–20 (Sweeney) (“Apple guidelines allowed cross-progression” while *Fortnite* was available on iOS); Trial Tr. 232:24–25 (Sweeney) (“And Apple supported Epic’s cross-platform play between different players on iOS and non-iOS devices”). That included previously changing its Guidelines to expressly permit the cross-platform functionalities

similar to what Epic had requested. DX-3725.010–.012 (§§ 3.1.1, 3.1.3). Apple continued to permit such cross-functionality on *Fortnite* while the game remained on the App Store. Trial Tr. 232:18–25 (Sweeney).

- 255.4 In addition to cross-platform play, Apple also facilitated cross-progression (game progress synced across platforms), Trial Tr. 108:2–13 (Sweeney), and cross-wallet functionality (allowing purchases from one platform to be used on others), Trial Tr. 197:1–14, 245:16–246:4 (Sweeney).
- 255.5 Epic has recognized that Apple’s permissive cross-platform policies contributed to *Fortnite*’s success as a cross-platform game and were “good for Epic’s bottom line.” Trial Tr. 196:15–25 (Sweeney).

C. Epic has benefitted from Apple’s support over the years

256. Epic reaped enormous benefits from its relationship with Apple. First, Epic used Apple’s robust technical tools and software to develop and improve its game apps.
- 256.1 Epic, like other developers, used many tools offered by Apple for developers. Trial Tr. 3241:9–3242:1 (Schmid). Epic’s use of these tools began long before it released *Fortnite* for iOS. *See supra* § XI.B (Epic released games for iOS as early as 2010).
- 256.2 For *Fortnite* alone, Epic has used thousands of Apple’s unique API frameworks and classes, as well as multiple versions of Apple’s SDK and Xcode builds, and other software and tools. Trial Tr. 671:15–16, 677:6–23, 745:16–19 (Grant); Ex. Expert 12 ¶ 44 (Malackowski).
- 256.3 For example, Epic has used Audio Toolbox, AVFoundation, CloudKit, CoreAudio, CoreGraphics, CoreMedia, CoreMotion, CoreVideo, Foundation, GameController, GameKit, iAD, IAP, Metal, MultipeerConnectivity, QuartzCore, StoreKit, UIKit, UserNotifications, and WebKit. Ex. Expert 12 ¶ 45 (Malackowski); *see also* Trial Tr. 677:17–78:10 (Grant).
- 256.4 “Just like with Apple’s APIs, it is not practicable for a developer to develop iOS or macOS compatible apps without using Apple-issued SDKs.” DX-3691.016; *see also* Trial Tr. 405:9–18 (Simon); Trial Tr. 669:4–12 (Grant). Apple’s software and tools also are superior to those available on other mobile devices. Apple Ex. Depo. 5 at 69:8–70:9 (Penwarden).
- 256.5 In one email, Epic’s Lead Producer of Special Projects, John Jack, wrote to Epic’s Vice President of Engineering, Nick Penwarden, “We’ve been making use of Metal on iOS to great effect since its release in 2014.” DX-3098.001. He went on, “[a] fast, agile, feature-rich API like Metal is exactly what we need to bring a game designed for modern consoles and desktops to the battery-powered iPhone and iPad.” *Id.* Apple’s tools “bl[ew] away” competitors “in every way” and were instrumental to getting “*Fortnite* ship-ready on iOS in a handful of months.” *Id.*

- 256.6 Indeed, Epic praised Metal and other Apple tools. Trial Tr. 248:2–251:1 (Sweeney); Ex. Expert 12 ¶ 32 (Malackowski); DX-3462 at 77:7–11, 79:3–10.
- 256.7 Apple protects this technology with its intellectual property rights, comprising patents, copyrights, and trademarks, Ex. Expert 12 ¶ 23 (Malackowski), which Apple agreed to license to Epic subject to the terms of the DPLA, Apple Ex. Depo. 5 at 100:1–2 (Penwarden).
- 256.8 Mr. Sweeney admitted that Apple was required to do technical work on the iPhone in order for the hardware to be sophisticated enough to play the Fortnite software. When asked by the Court to compare Apple’s work to that of console makers, he stated: “I think the development of the hardware technology and the operating system is very similar. My comparison only is the differences between the business models underlying the different platforms.” Trial Tr. 140:7–20 (Sweeney). By business models, Sweeney means that he believes Apple should not charge a commission if its hardware is profitable. Trial Tr. 139:3–20 (Sweeney).
257. Second, Apple provided Epic with an extraordinary degree of support as it expanded its business on iOS.
- 257.1 Apple’s Developer Relations support of Epic in relation to *Fortnite* was “a never ending crescendo of support,” and was in near-constant contact with Epic in what turned into “a pretty demanding relationship.” Trial Tr. 3249:18–3250:5 (Schmid). Apple even brought an employee stationed in Australia onto the Epic team so that Apple could provide Epic with 24-hour coverage. Trial Tr. 3250:10–13 (Schmid).
- 257.2 Internal documents note that Apple and Epic collaborated, as part of a “Strategic Partnership,” to “[h]elp optimize Fortnite mobile,” “[p]romote Fortnite subscriptions,” run “season launches bigger than ever,” among other collaborations. DX-3519.037. Indeed, Apple held weekly conference calls with Epic regarding “Fortnite-related topics.” Apple Ex. Depo. 5 at 93:25–95:11, 13–14 (Penwarden).
- 257.3 Epic also asked Apple for, and received, assistance with fixing various technical issues on multiple occasions. For example, Epic asked Apple to help improve the “[p]atching [p]rocess,” “[d]ecreas[e] [t]ime-to-[g]ame,” and for “recommendation[s] for creating and running a more efficient” game. DX-3519.038. Apple also successfully “worked with [Epic] to reduce the memory footprint of Fortnite so [Epic] could more quickly update to the newer version of XCODE.” Trial Tr. 3243:8–19 (Schmid). Apple would even reach out proactively to discuss ways in which it could help support Epic on various devices. DX-4011.
- 257.4 On other occasions, Apple offered engineering support to Epic with Unreal Engine. Trial Tr. 3242:23–3243:7 (Schmid).
258. Third, Epic benefitted significantly from Apple’s robust app review process.
- 258.1 Apple’s app review team reviewed *Fortnite* more than 200 times. Trial Tr. 3251:14–16 (Schmid).

- 258.2 While Apple does not assign specialists to a single app or company, Apple internally escalated Epic's requests to prioritize them. Trial Tr. 3251:20–3252:21 (Schmid). These demands were frequent. From May 2018 to May 2019, Epic made “34 (!)” expedited requests. DX-3427.001. In October 2019 email, Apple observed that Epic had submitted “‘emergency’ patches with ‘critical’ fixes every week for quite some time.” DX-3758.001. As Apple observed, “[i]t almost feels like they’re abusing expedite requests due to a systematic issue on their end in the development/QA/submission process.” DX-3427.001.
- 258.3 Nonetheless, Apple honored almost all of Epic's 80+ requests for expedited app review in 2020. Trial Tr. 3252:3–4 (Schmid).
259. Fourth, Apple provided Epic with an unprecedented degree of marketing support. This marketing support helped Epic benefit from Apple's trademarks and brands. Trial Tr. 938:13–939:6 (Fischer); Ex. Expert 12 ¶ 46 (Malackowski).
- 259.1 As noted above, Apple also specially promoted the launch of iOS apps developed by Epic. *See supra* § XI.B. For example, Epic's lead gameplay programmer appeared during WWDC 15 to showcase Epic's launch of *Fortnite* through an on-stage demo at WWDC 15—reaching the full WWDC 15 audience (and subsequent viewers through YouTube). DX-4489.011–.013; Ex. Expert 12 ¶ 46 (Malackowski).
- 259.2 Apple also repeatedly featured Epic's *Fortnite* app in the App Store and promoted new seasons of *Fortnite* through social media and other marketing channels. DX-4489.012; Trial Tr. 1337:22–1338:3, 1393:11–1394:9 (Weissinger). “These included App Store banners and app featuring as well as posts and paid advertisements on social media.” DX-4489.012.
- 259.3 Indeed, Apple even “permitted *Fortnite* to ‘take over’ the App Store at times, featuring the app prominently on the App Store's most sought-after and frequented spaces.” Trial Tr. 1394:24–1396:14 (Weissinger); Trial Tr. 3244:14–22 (Schmid). Epic was the first to take over the App Store after the 2017 redesign and was also given creative control over what it wanted to display and how. DX-3457.001. *Fortnite* also was provided with a full-screen “takeover” of the App Store's “Games” tab. Trial Tr. 1394:24–1396:14 (Weissinger); Trial Tr. 3244:14–22 (Schmid).
- 259.4 Another example in which Apple “moved mountains” for Epic was its 2018 enablement of gifting. Trial Tr. 939:9–940:9 (Fischer). In response to a request from Epic to enable gifting for a *Fortnite* promotion, Apple not only changed its guidelines but developed new safety requirements to permit such gifting in *Fortnite* (and for *all* developers) going forward. Trial Tr. 940:4–9 (Fischer).
- 259.5 As but a few more examples, during WWDC 18, Apple asked Epic to participate in a presentation regarding Metal, and Epic gave a presentation using *Fortnite* on iOS as an example. DX-4489.011–.013. Apple provided marketing support for

Fortnite's 2019 virtual Marshmello concert, Trial Tr. 940:13–23 (Fischer); Apple Ex. Depo. 6 at 65:8–68:1 (Rein), including paying for a billboard in Times Square. Trial Tr. 1397:17–1398:9 (Weissinger).

259.6 Apple sent 500 million marketing communications about *Fortnite*. Trial Tr. 3246:1–18 (Schmid). And in just the 11 months prior to *Fortnite*'s removal from the App Store, Apple spent close to \$1,000,000 on paid marketing for *Fortnite*. Trial Tr. 3248:22–3249:1 (Schmid). As Mr. Schmid testified about the level of support Apple provided *Fortnite* relative to its support of other games, “[The support from Apple] was far more than any other game I’d worked on at that point and more than I’ve seen since.” Trial Tr. 3249:2–5.

259.7 Epic executives repeatedly recognized and thanked Apple for its support and promotion of *Fortnite*. Trial Tr. 3259:14–25, 3262:9–20 (Schmid); *see also, e.g.*, DX-4239.001 (thanking Apple for its support to *Fortnite*'s Season X launch, noting “[t]hese wins truly matter to our teams here”); DX-3661.

260. [OMITTED]

D. Epic has achieved success with *Fortnite* by using free distribution (and in-game purchasing functionality) to earn more than \$700 million across over 100 million iOS accounts

261. Since its 2018 iOS debut, *Fortnite* has been distributed using a “freemium” model, in which a user can download the application for free but has the opportunity to purchase certain in-app content. Trial Tr. 187:15–23 (Sweeney). Mr. Sweeney “attribute[s] a lot of our success” to this model. Trial Tr. 187:24–188:7 (Sweeney). This kind of business model is facilitated by the App Store, including IAP. Trial Tr. 2791:11–18 (Schiller); Ex. Expert 8 ¶ 134 (Schmalensee).

262. From the start, iOS drove new players to *Fortnite*. DX-3233.003. *Fortnite*'s introduction to the App Store coincided with the median value of an in-app purchase on Epic apps through the App Store roughly doubling. Trial Tr. 2111:22–2112:15 (Hitt); Ex. Expert 6 ¶ 175, Fig. 42 (Hitt). Indeed, Epic saw mobile platforms like iOS as key to increasing the *Fortnite* player base, believing that it had already reached “a point of basically full penetration on console,” making acquisition of mobile customers “hugely important.” Trial Tr. 1346:3–17 (Weissinger).

263. That said, the vast majority of Epic's *Fortnite* revenue (93%) is generated on non-iOS platforms. Ex. Expert 6 ¶ 69 (Hitt). Among users who made a purchase between March 2018 and July 2020, only 13% made a purchase on an iOS device—meaning that Epic was able to transact with 87% of paying *Fortnite* users without paying any commissions to Apple. Ex. Expert 6 Fig. 14 (Hitt).

264. Still, with Apple's support, in only two short years, *Fortnite* on iOS earned Epic more than \$700 million across over 100 million iOS user accounts. Ex. Expert 6 Fig. 14 (Hitt).

E. Epic Games Store is unprofitable and not comparable to the App Store

265. As noted above, EGS is not profitable and will not be profitable for at least multiple years, if ever. Trial Tr. 126:19–127:6 (Sweeney); Trial Tr. 1230:3–8; 1231:15–19 (Allison); Apple Ex. Depo. 2 at 244:2–5; 256:12–16 (Kreiner).

265.1 Epic lost around \$181 million on EGS in 2019. DX-4361.020. Epic also had \$1 billion in minimum guarantees for its exclusivity agreements, of which it estimated it would recoup about 60–70%. PX-2463.2. Epic projected to lose around \$273 million on EGS in 2020. *Id.* Indeed, Epic committed between \$330 and \$440 million in uncoupled minimum guarantees for 2020 alone, Trial Tr. 1217:25–1218:5 (Allison), PX-2469.006, while projecting, even with “significant[.]” growth, only \$401 million in revenue for that year, DX-3467.005. Epic acknowledges that trend will continue in the immediate future: Epic projects to lose around \$139 million in 2021. DX-4361.020. Mr. Sweeney testified that he expected EGS to be profitable in three to four years, Trial Tr. 266:10–19 (Sweeney), but admitted the cumulative earnings of EGS in 2024 were projected as negative \$854 million. Trial Tr. 276:17–277:4 (Sweeney); DX-4361.020. Actual EGS revenues and its Monthly Average Users have not grown since 2019. PX-2455.4.

265.2 As Epic has acknowledged, the incentives and investments it has made in an attempt to grow EGS will result in “unrecouped costs.” DX-3993; Trial Tr. 1262:4–12 (Allison) (Q. And [this] also reflects that Epic expected to lose 330 to 440 million in unrecouped minimum guarantess is that right? A. We expect to invest 330 to 440 million in partnership deals, yes. . . . We don’t use the word lose.”). The direct return on investment was “super crappy.” Trial Tr. 273:9–16 (Sweeney); DX-3818.001. Although Epic financial projections reflect that Epic expects to lose \$330 to \$440 million in unrecouped costs from minimum guarantees alone, DX-3993.004, Epic now says its financial projections are “incorrect,” Trial Tr. 1232:18–22, 1262:13–20 (Allison). Epic documents reflect that Epic does not expect EGS to have a cumulative gross profit before 2027. DX-4361.020. And while Epic now says it expects EGS to become profitable by 2023, its projected revenue from prior years has proven overly optimistic. Trial Tr. 1266:6–1267:2 (Allison).

265.3 Epic’s hope is that after consumers purchase an exclusive game through EGS they will stay in the Epic ecosystem and make additional EGS purchases. Trial Tr. 1250:1–1251:12 (Allison).

266. In addition, EGS provided services and user experiences that were inferior to leading platforms like the App Store.

266.1 EGS only very rarely provides paid marketing support for its developers because it is difficult to recoup such investments on a 12% commission. Trial Tr. 1260:8–21 (Allison).

- 266.2 Epic was concerned that EGS would “fall over” and be unable to support the influx of web traffic resulting from the August 13, 2020 Mega Drop. Trial Tr. 1269:13–1270:16 (Allison).
- 266.3 Epic also lacks other security features. Because of the integration between its hardware, software, and services, Apple is able to provide parental controls that give parents choices on how and whether to allow children to make purchases. Apple Ex. Depo 10 at 150:22–151:6 (Shoemaker). Epic does not track the age of its customers. Trial Tr. 335:14–19 (Sweeney).
267. There have been significant security breaches involving EGS as well.
- 267.1 For one, EGS has experienced high rates of fraud. For example, “the rate of fraudulent transactions on Division 2”—a videogame developed by Ubisoft—“surpassed 70%, and was approaching 90%” in May 2019. DX-3536.001. Mr. Sweeney admitted this was “an extraordinary situation” and had to personally apologize to Ubisoft (Division 2’s developer). DX-3536.001. “The fault in this situation is entirely Epic’s,” he wrote. *Id.*; see also DX-3756.008 ([REDACTED]).
- 267.2 As Mr. Grant admitted, Epic’s record with dealing with its developers has been “not at all” perfect. Trial Tr. 732:13–16 (Grant).

F. Epic lays the groundwork for Project Liberty in order to revive and reinvigorate its business

268. Between 2018 and 2019, *Fortnite*’s average monthly active users and revenues declined.
- 268.1 Epic observed 76.2 million active monthly users in the third quarter of 2018, which fell to 72.2 million users in the fourth quarter of 2018, 71.3 million active users in the first quarter of 2019, 64.8 million active users in the second quarter of 2019, and 60.3 million active monthly users in the third quarter of 2019. DX-3795.004.
- 268.2 Epic’s revenue declined during the same time. Apple Ex. Depo. 1 at 102:18–103:14 (Babcock). Total revenue slipped. DX-3795.006. Average revenue per paying user also declined as Epic observed “monetization ‘fatigue.’” DX-3795.004. Whereas *Fortnite*’s cumulative gross revenue had begun in January 2019 27% *ahead* of Epic’s projections, it had fallen to 10% *behind* those projections by the end of the year. DX-3795.006. Mr. Sweeney admitted that *Fortnite*’s revenues declined in 2019, and starting recovering only in 2020, when COVID-19 caused many consumers to stay at home. Trial Tr. 288:15–289:5 (Sweeney); *id.* 289:21–290:25 (Sweeney); PX-2436.1.
- 268.3 These trends were consistent with Epic’s observations that gamers were growing dissatisfied with *Fortnite*. The company understood that *Fortnite* was late in the video-game life cycle. DX-3774.002 (Epic recognizing a “slow down in engagement” in *Fortnite* in 2020). Its revenue dipped in 2019, and recovered in 2020 in part because of a “particularly historically unique pop” owing to the

pandemic. Trial Tr. 288:15–25 (Sweeney); *see also* DX-5523.048 (Microsoft’s analysis of Epic Games, reflecting significant revenue decline in FY2019).

- 268.4 Epic knew these trends were not a blip; the company expected the declining interest and revenue to continue. Apple Ex. Depo. 1 at 103:11–13 (Babcock).
269. As a later board presentation revealed, Epic coalesced around a goal: To revive and reinvigorate *Fortnite* by turning it out to developers to create new content. DX-3774.003–.004. This would make *Fortnite* a platform and Epic the middleman. But in order for this new business model to succeed, Epic needed to find a way to cut the commissions charged by platform providers so Epic could “shar[e] [a] majority of profit with creators.” DX-3774.004. According to Epic, “Platform Fees” posed “an Existential Issue” to the company’s plans for *Fortnite*. *Id.*
270. The result was “Project Liberty,” Epic’s effort to challenge the software distribution and supposed payment monopolies of Apple and Google. Trial Tr. 152:9–53:4 (Sweeney); DX-3774.002. Epic knew at the time that there was a separate class actions “on behalf of all developers against Apple,” but “ignored that and went forward on [its] own.” Trial Tr. 155:13–25 (Sweeney).
271. Project Liberty was driven from the top: Mr. Sweeney was “in the loop on this topic 100%,” DX-4419.001, and approved the strategic decisions for Project Liberty. Trial Tr. 88:6–7, 170:10–71:9, 280: 283:6–15 (Sweeney). The Epic Store team was aware of Epic’s efforts to circumvent its owed commissions by September 2019. Trial Tr. 1411:11–25 (Weissinger). As Mr. Weissinger—who “attended a lot of Project Liberty meetings”—agreed, Project Liberty was “carefully planned, carefully orchestrated, and carefully supervised.” Trial Tr. 1424:23–24, 1428:14–16 (Weissinger).
- 271.1 Chief among these was Epic’s decision to only target the two main mobile platforms: Google and Apple. Trial Tr. 146:21–23 (Sweeney). As noted above, Epic earned only a small fraction of its total *Fortnite* revenue through these companies’ platforms and projected for 2020 that they would comprise just 6.5% of *Fortnite*’s net revenue. DX-4018.012.
- 271.2 It also meant that Epic chose not to target all platforms charging 30%. Apple Ex. Depo. 7 at 79:5–80:3, 89:20–90:24, 95:19–96:15 (Shobin). [REDACTED]
[REDACTED]. Trial Tr. 211:5–12 (Sweeney).
- 271.3 Epic’s decision thus was incongruous with much of its stated rationale. *See* DX-3782.010 (Epic employee explaining that “Tim S[weeney] stated that Samsung is our most important partner, above all others,” in response to another employee pointing out that Epic’s “collective win” would lie in “aim[ing] at Samsung like we begrudgingly do with Apple”). “For god’s sake, why do we hate Apple,” one Epic employee asked internally. DX-3782.003.
272. To plan, prepare, and execute Project Liberty, Epic assembled a considerable team. Sometime in 2019 or early 2020, Epic hired Cravath, Swaine & Moore LLP to devise the

company's legal strategy. Trial Tr. 279:19–280:3 (Sweeney). And “[a]t Tim [Sweeney]’s request” Epic formed “a special project team” in April 2020. DX-3523.001. Epic assembled about 100–200 employees to staff Project Liberty. Apple Ex. Depo. 7 at 94:18–25 (Shobin).

272.1 Although Mr. Allison testified that he believed Epic’s decision to make its payment system optional in December 2019 was made prior to the launch of Project Liberty, Trial Tr. 1222:2–16 (Allison), Mr. Sweeney testified that “the idea for Project Liberty developed throughout 2019.” Trial Tr. 152:24–153:4 (Sweeney).

273. Epic’s first strategic choice was to submit *Fortnite* to the Google Play Store.

273.1 [REDACTED]. Trial Tr. 205:3–13 (Sweeney). [REDACTED]
[REDACTED]
[REDACTED] Trial Tr. 203:5–12 (Sweeney); *see also supra* § XI.A.

273.2 Epic reversed course in 2020 to pave the way for its plan to attack Apple and Google at once, adding *Fortnite* to the Google Play Store for the express purpose of initiating Project Liberty. Trial Tr. 195:6–7, 210:9–11:4 (Sweeney). Internal emails from September 2019 reveal Epic’s “goal” was “to draw Google into a legal battle over anti-trust. Once we are ready to submit, Epic will announce publicly that we are going to Google Play. If we are rejected for only offering Epic’s payment solution. The battle begins. It’s going to be fun!” DX-3069.001.

274. Epic spent the Spring of 2020 in the planning stages of Project Liberty. Trial Tr. 153:1–4 (Sweeney).

274.1 Epic “investigated” various ways it could surreptitiously implement an alternative payment system, “like, obfuscating the code” or “encrypt[ing]” the relevant features. Apple Ex. Depo 4 at 168:1–21 (Nikdel).

274.2 Significant planning for Project Liberty began in early 2020 and in the first quarter of 2020 Epic made the decision to pursue Project Liberty and to challenge Apple and Google. Trial Tr. 152:24–153:4 (Sweeney). By May 11, 2020, the main contours of Epic’s strategy were in place: “We submit a build to Google and Apple with the ability to hotfix on our payment method We flip the switch when we know we can get by without having to update the client for 3 weeks or so. Our messaging is about passing on price savings to players.” DX-4419.002; Trial Tr. 767:15–18 (Grant).

274.3 In addition, Epic developed “Epic Mega Drop,” its plan to lower the price of *Fortnite* items by an average of 20 percent on certain platforms. Trial Tr. 156:3–16 (Sweeney). “Mega Drop” would reduce pricing on platforms other than Apple’s and Google’s, even though Epic was still paying 30% commissions to the console makers. DX-4561.006; Trial Tr. 1431:1–5 (Weissinger). The Mega Drop was part

of the campaign that Epic wanted to “explain[] to the public through PR.” Trial Tr. 161:6–7 (Sweeney). Epic worked to ensure it would have sufficient capacity to handle the expected increase in web traffic resulting from the Mega Drop. Trial Tr. 1269:13–1270:16 (Allison). Epic also planned to assure its console partners that the reduction in price for V-Bucks could be recouped through the sales of more expensive bundles or items with “mythic” rarity. Trial Tr. 1436:9–19 (Weissinger); DX-4652.

274.4 Epic began holding weekly meetings to plan Project Liberty’s details, frequently including Epic’s outside counsel, Cravath, Swaine & Moore LLP. DX-4138.001. Indeed, at least one attorney from Cravath, Mr. Gary Bornstein, had his own Epic email address. DX-4138.001; Trial Tr. 1425:23–1426:6 (Weissinger).

274.5 By the end of June 2020, Epic had established its rough timeline:

- On June 30, Epic would “[a]sk Apple and Google leadership to allow competing stores and competing payment methods.”
- On July 20, Epic would reach out to its console partners to discuss upcoming price changes.
- On August 4, Epic’s client—including the “tech for [hot-fixing] on competing payment methods”—would “go[] live.”
- On August 13, Epic would activate the hotfix and implement the price reductions.

DX-4561.005. The hotfix was timed to go live two weeks before the launch of *Fortnite*’s Season 14. *Id.*

275. In accordance with its timeline, extensively designed and tested the hotfix to be undetectable. Trial Tr. 762:1–763:9 (Grant). Epic brought in specialist engineers and also had its own in-house information security team attempt to hack the code to make sure Apple could not “reveal the intent” of the hotfix after it was submitted. Trial Tr. 765:11–766:2 (Grant). Epic also used analytics to determine the number of players that would receive the hotfix once triggered. Apple Ex. Depo. 7 at 239:9–25 (Shobin); DX-3083; *see also* Trial Tr. 3241:20–24 (Schmid) (explaining that Epic used TestFlight and App Analytics).

G. Epic renews its agreement with Apple, then seeks a side deal

276. Epic renewed its DPLA with Apple in June 2020. Trial Tr. 283:16–284:1 (Sweeney).

277. The same day Epic and Epic International renewed their agreements, Epic sought a “side letter” or other special deal from Apple that would provide Epic with unique, preferable terms. Trial Tr. 149:4–7, 285:7–22 (Sweeney). Specifically, Epic asked Apple to allow “[c]ompeting payment processing options” on iOS apps and to release a “competing Epic Games Store app available through the iOS App Store.” DX-4477.001. Although Epic expressed its preference that the demanded changes be made available to all developers, Mr. Sweeney testified that “I would have” accepted a deal “for [Epic] and no other developers.” Trial Tr. 338:2–6, 337:13–19 (Sweeney). Epic demanded a response within two weeks. *Id.*

278. Apple replied on July 10, 2020. DX-4140.

278.1 In that letter, Apple reminded Epic that “[t]he App Store is not simply a marketplace—it is part of a larger bundle of tools, technologies and services that Apple makes available to developers to develop and create great applications for” Apple products, and that Epic “has been a major beneficiary of this investment and support.” DX-4140.001.

278.2 Apple continued: “Because of the App Store, Epic has been able to get *Fortnite* and other apps into the hands of millions instantly and at no cost, as Apple charges nothing upfront to distribute apps that are free to download. This exposure has earned Epic hundreds of millions of dollars from sales of in-app content, and brought with it lucrative brand partnerships and paid product placement.” DX-4140.001–.002.

278.3 Apple pointed out that it has maintained the same rules on the App Store since 2008, and has never allowed anything like what Epic demanded, because “[t]he guiding principle of the App Store is to provide a safe, secure and reliable experience for users and a great opportunity for all developers to be successful but, to be clear, when it comes to striking the balance, Apple errs on the side of the consumer.” DX-4140.002–.003.

278.4 In response to Epic’s demand that Apple allow the Epic Store onto iOS, Apple explained that it “cannot be confident that Epic or any developer would uphold the same rigorous standards of privacy, security, and content as Apple. Indeed, since Apple treats all developers according to the same terms, Epic is essentially asking Apple to outsource the safety and security of Apple’s users to hundreds of thousands of iOS developers.” DX-4140.004. “Even if such a model were feasible (and it is not), we are simply unwilling to risk our users’ trust in such a way. Incorporating third party app stores into iOS would undermine Apple’s carefully constructed privacy and security safeguards, and seriously degrade the consumer experience and put Apple’s reputation and business at risk.” *Id.*

278.5 Apple then “respectfully decline[d]” to accede to Epic’s request to turn the App Store into “a public utility.” DX-4140.006.

279. Epic responded on July 17, 2020, calling Apple’s letter a “self-righteous and self-serving screed” and warning that “Epic is in a state of substantial disagreement with Apple’s policy and practices, and we will continue to pursue this, as we have done in the past to address other injustices in our industry.” DX-4480.001. In neither Mr. Sweeney’s June 30 email nor his July 17 email did Epic reveal its plans to enable an alternate payment system through a hotfix.

H. Epic carefully prepares to launch a media campaign against Apple

280. Epic recognized that it was “not sympathetic.” DX-4177.011; *see also* Trial Tr. 1414:2–15 (Weissinger). It also recognized that if Apple and Google blocked consumers from accessing the app, “[s]entiment will trend negative towards Epic.” DX-4018.054. “[T]he

critical dependency on going live with our VBUCKS price reduction efforts is finding the most effective way to get Apple and Google to reconsider without us looking like the baddies.” DX-4419.002.

281. [OMITTED]

282. To these ends, Epic wanted to “[g]et players, media, and industry on ‘Epic’s side,’” DX-4561.020, by “[c]reat[ing] a narrative that we are benevolent,” DX-3641.001; *see also* DX-3681.012, and at the same time make Apple out to be the “bad guys,” DX-4185.001. Epic retained a public relations firm, DX-4561.038—to which it ultimately paid \$300,000 in connection with Project Liberty, Trial Tr. 1413:9–12, 1417:19–1418:7 (Weissinger)—and devised a two-phase communications plan, DX-4561.037–.038.

282.1 Epic has a massive social media presence, with many channels and opportunities to communicate with its fans and *Fortnite* players—as Mr. Weissinger stated, Epic has its “social channels, which are some of the biggest in all of entertainment and certainly the most engaged, which just means chatter and people talking. Like, we have gigantic social channels, so we use that.” Trial Tr. 1311:7–1312:9 (Weissinger); *see also* Trial Tr. 1340:11–24 (Weissinger) (“*Fortnite*’s channels again are extremely extremely large, some of the largest in all of entertainment. Frequently I would have my social media manager who would come to me and say, ‘Hey, should we keep doing these promotions with the App Store,’ because they would consistently ask for re-Tweets and re-shares of content because *Fortnite* content gets a ton of engagement”). Epic has “over a hundred million” followers across its media channels. Trial Tr. 1312:6–9 (Weissinger). The Epic Games Store likewise has a “strong media presence,” with about “five million Instagram followers.” Trial Tr. 1243:15–17, 1244:16–23 (Allison).

283. “Communications Phase 1” outlined Epic’s plan leading up to the activation of the hotfix. DX-4561.037. This phase had three goals. *Id.*

283.1 First, Epic sought to “Define our Cause.” DX-4561.037. Epic sought to devise “Policy Points” and start “Establish[ing] them Publicly.” *Id.* To do so, its internal communications team and outside consults would “create a list of advocacy points” and “then seed with press and run ads.” *Id.*

283.2 Second, Epic decided to “Establish a 501c4 Organization” to “[a]dvocate” on its behalf. DX-4561.037. The purpose of establishing a separate organization was to create a “sympathetic” public face. DX-4561.037. “Epic is not sympathetic.” *Id.* Smaller developers, Epic concluded, “are sympathetic.” *Id.*

283.3 Third, Epic would “Create the Sustain Campaign,” a “messaging” initiative “to ensure we’re not the only voice” because, “[w]hen it comes to the press, that results in more neutral to positive coverage.” DX-4561.037.

284. “Communications Phase 2” outlined Epic’s plan once the hotfix went live. DX-4561.038. It too had three goals. *Id.*

- 284.1 First, Epic would continue its efforts to “seed” the press and “run ads” to “help establish our position.” DX-4561.038.
- 284.2 Second, Epic would leverage “[t]raditional public relations where we use the press to apply pressure and drive support.” DX-4561.038. Epic decided to “follow a two-week cadence where we create news through an inflection point every two years, and then generate continued press on that point through a 14-day tail.” *Id.* This “strategy focuses on, exhausts and moves on with three distinct audiences (press, consumers & policy makers) to influence the groups most likely to have an impact on Apple/Google.” *Id.*
- 284.3 Third, Epic would use “Paid Media Efforts.” DX-4561.038. This entailed enlisting “a game-changing supporter list” to “influenc[e] the general public.” *Id.* Epic also intended to “target our digital advertising to both function as a push/pressure campaign” and create a petition drive to suggest the public supported its efforts. *Id.*
285. Throughout the summer of 2020, Epic carried out its plan. Epic created the Coalition for App Fairness, DX-3774.003; DX-3297, and “charged [it] with generating continuous media and campaign tactic pressure” on Apple/Google, DX-3297.002. Epic’s Statement of Work Attachment with its consultant required the consultant to “help to establish a reason for [the Coalition] to exist (either organic or manufactured).” DX-3297.002; Trial Tr. 1418:17–1420:5 (Weissinger). One of the members of the Coalition for App Fairness is Eristica, a company that developed an app rejected by App Review that “paid folks to participate in a dare challenge” and when it was rejected “one of the dares was daring someone to jump off a bridge and video it” and other challenges “could also risk some pretty serious harm.” Trial Tr. 1087:9–1088:18 (Kosmynka). Epic concealed the Coalition’s existence until after the hotfix was triggered on August 13, 2020. Trial Tr. 1420:6–8 (Weissinger).
286. Meanwhile, Epic gamed out various communications strategies depending on Apple and Google’s responses to the hotfix. DX-4018.004. If *Fortnite* were “[r]emoved from [the] App Store,” Epic decided that its “PR [team would] issue[] [a] statement saying [Apple and Google] removed the app because Epic wanted to offer cheaper payment platforms to players.” DX-4561.046. This was consistent with the input Epic had sought and received from an outside consultant: Shift the narrative to “Apple/Google versus the player” and “Apple/Google versus the developer.” DX-3933.002.
287. Epic also prepared several videos, communications, and other media with which it could blitz Apple. Epic prepared a short video called “1980 *Fortnite*” in the style of *Fortnite* which presented an in-brand explanation of what Epic had done. Trial Tr. 295:14–17 (Sweeney). On its website, the Coalition falsely stated that “For most purchases made within the App Store, Apple takes 30% off the purchase price. No other transaction fee—in any industry—comes close.” DX-4167.002 (emphasis added).

I. Epic briefs its board of directors and puts into place the final pieces of Project Liberty

288. On July 27, 2020, Epic briefed its Board of Directors on Project Liberty, “Epic’s War Against Mobile Platform Fees.” DX-3774.002. The presentation detailed Epic’s “Battle Plan.” DX-3774.006.
289. Epic outlined for its board the timeline it had devised. Epic had spent July forming the Coalition for App Fairness, testing the payment system it intended to smuggle in with the hotfix, and conducting “[p]ublic outreach.” DX-3774.008. August 13, 2020, remained the “Go Live”—the date on which Epic would activate the hotfix—as it was “a Point of Maximum Leverage” given the upcoming launch of a new *Fortnite* season two weeks later on August 27, 2020. *Id.*
290. Epic described its plan to “embark on an aggressive and sustained legal and media campaign until platform fees are lowered, apps are allowed to use their own payment platform or 3rd party app stores are allowed on mobile.” DX-3774.003. Epic would “lead a coalition of other leading tech companies in a PR and policy campaign against the 30% tax.” *Id.* And even after the go-live, Epic planned to hold weekly press beats as well as ongoing press interviews and “coalition communications.” DX-3774.008.
291. Epic also briefed its board on “Elasticity” studies it had conducted. DX-3774.010. Epic acknowledged that these tests indicated that price reductions would increase “[p]urchase frequency . . . but not enough to offset price reductions.” *Id.* Indeed, these studies indicated that average revenue per daily active user (ARPDau) would drop 10.8% from spending under normal circumstances. *Id.* Epic therefore assured its board that the company’s “business performance” so far that year “mitigated” the “[d]ownside,” DX-3774.016, which was outweighed by the “[e]xistential” threat “Mobile Platform Fees” posed to “Fortnite as a competitive platform,” DX-3774.004.
292. [OMITTED]
293. Epic also began meeting more frequently—including with its outside counsel, DX-4072—and prepared a “War Room.” DX-4072.001. Epic drafted detailed calendars to synchronize its communications strategy with the broader implementation of the hotfix. DX-4561.030–.033, .045.

J. Epic knew its calculated breach would result in the removal of *Fortnite* from the App Store

294. Internally, Epic understood that Project Liberty “jeopardize[d] Fortnite’s availability on the App Store.” Apple Ex. Depo. 7 at 59:24–60:5 (Shobin). Mark Rein, Epic’s co-founder, predicted “there’s a better than 50% chance Apple and Google will immediately remove the games from their stores the minute we do this” and Daniel Vogel, the Chief Operating Officer of Epic, predicted Google and Apple will immediately pull the build for new players.” DX-4419.001–.002. “They may also sue us to make an example,” he added. *Id.*
295. Epic therefore planned to inform its console partners (Sony, Microsoft, and Nintendo) in advance about an upcoming pricing change while keeping Apple and Google in the dark.

DX-4561.005, .024; DX-4652.001; Trial Tr. 1431:6–15 (Weissinger). Epic also, as part of its plan to organize opposition to Apple, planned to reassure the console makers that they were not “next on [Epic’s] list,” repeating the same mantra that it has in Court, that it “do[es]n’t have the same concerns with consoles.” DX-4652.010.

296. That is what Epic did. In a June 2020 Quarterly Business Review, for example, Epic “update[d] Apple to the latest stuff in Fortnite.” Apple Ex. Depo. 7 at 235:5–8 (Shobin). While this update covered anticipated offerings in *Fortnite* in late 2020 and 2021, it did not mention the hotfix or payment alternatives. DX-3519. Nor did Epic disclose the hotfix in the user notes it submitted to Apple with a Fortnite update. Trial Tr. 763:10–13 (Grant).
297. Meanwhile, Epic wrote to other platforms. DX-4579.001. In an email to Microsoft on August 5, 2020, for example, Mr. Sweeney explained his “confidential” plan to drop *Fortnite* prices that month. *Id.* He then added, “Epic has certain plans for August” that would “highlight the value proposition of consoles and PCs, in contrast to mobile platforms”—a “positive and supportive” development, he promised, “for Microsoft, Xbox and Windows.” *Id.* Two days later he wrote, “you’ll enjoy the upcoming fireworks show.” DX-3478.001. Mr. Sweeney presented Project Liberty in this email “as an opportunity to Microsoft” and an opportunity to onboard users. Trial Tr. 292:14–293:8 (Sweeney). The “fireworks” referred to the hotfix. Trial Tr. 294:2–10 (Sweeney).

K. In August 2020, Epic committed an intentional act of sabotage against the App Store

298. In August 2020, Epic intentionally violated its commitments to Apple. Trial Tr. 170:10–15 (Sweeney).
299. On August 3, 2020, Epic submitted version 13.40 of *Fortnite* to Apple for review. Unbeknownst to Apple, version 13.40 included code that enabled Epic to later activate the hotfix. Trial Tr. 736:1–15, 763:10–15 (Grant); Trial Tr. 170:16–171:9 (Sweeney) (“Q. And, again, so we are sure of what this involved, you put undisclosed code in a build with Fortnite? A. Yes. Q. With the goal that it would not be discovered by Apple through the app-review process? A. Yes. Q. That is part of why you made it a server-side trigger so that it couldn’t be found when you submitted the build; right? A. Yes. Q. And Epic used that code weeks later to place an alternative payment function in Fortnite; correct? The Epic Direct Pay function? A. Yes. Q. So the payments could be made directly to Epic Games; right? A. Yes, through a payment processor of our choosing. Q. And Epic could avoid its contractual obligation to pay Apple a commission; correct? A. Yes.”); DX-4138.002. During the review process, Epic concealed from Apple its plans to launch an unapproved alternative payment system via hotfix. Trial Tr. 1089:3–9 (Kosmynka); Trial Tr. 763:10–13 (Grant). Indeed, Epic and Apple had their quarterly business review just [weeks] before, and Mr. Fischer (who was involved with that review) felt “blindsided” by the hotfix. Trial Tr. 944:5–945:3 (Fischer).
300. Around 2:00 a.m. on August 13, 2020, Mr. Sweeney notified Apple that it was activating its hotfix and that the Direct Pay function included in the *Fortnite* update would be activated. Trial Tr. 153:21–25, 294:11–16 (Sweeney). Epic had by that time already activated its hotfix, which was “very unlike all the others,” to inject a hidden payment

mechanism—Epic Direct Payment—in *Fortnite* that blatantly evaded App Review. Trial Tr. 128:14–15, 153:21–22, 154:25–55:3 (Sweeney); Trial Tr. 736:6–15 (Grant). Epic had prepared for the events of August 13 carefully, creating a “run of show” that identified each step and operating a Slack channel for the activation of the hotfix. Trial Tr. 1426:20–1428:16 (Weissinger). As Mr. Sweeney testified, the “introduction of Epic Direct Payment was a very major change” that “was in direct violation of Apple’s terms.” Trial Tr. 154:6–10, 154:25–55:1 (Sweeney). Indeed, he “chose to intentionally breach [his] contract.” Trial Tr. 170:12–15 (Sweeney).

L. As Epic anticipated, Apple removes *Fortnite* from the App Store

301. On August 13, 2020, between seven and nine hours after the hotfix was implemented, Apple removed *Fortnite* from the App Store. Trial Tr. 148:18–22, 156:24–57:4 (Sweeney).
302. At 2:22 p.m. that day, Apple informed Epic in writing that *Fortnite* had been removed from the App Store for violations of the App Store Review Guidelines. DX-3460.003; Trial Tr. 737:7–15 (Grant). Apple explained that version 13.40 of *Fortnite* violated Guidelines 3.1.1, 2.3.1, 2.3.12, and 2.5.2. DX-3460.003–.006. Apple also explained the steps Epic would need to take to cure its breach: Epic had to remove the “Epic Direct Payment” feature, remove any hidden features from *Fortnite*, provide a clear description of the actual changes Epic had made to *Fortnite*, and resubmit *Fortnite* for app review. *Id.*; Trial Tr. 737:7–15 (Grant). In other words, Apple provided Epic with a clear opportunity to come back into compliance, and restore *Fortnite* to the App Store, and Epic rejected it. Trial Tr. 171:10–25 (Sweeney); Trial Tr. 768:7–13 (Grant). When asked whether Epic was concerned about the effect this decision would have on consumers, Mr. Grant, an executive who oversaw the hotfix’s development, testified: “I cannot speak to whether it was a concern or not.” Trial Tr. 768:21 (Grant).

M. Epic sues and declares war on Apple

303. Even though Epic’s own executives have now admitted that they would not want to do business with a company that “put material things by you in attempt to enrich themselves and to breach their contracts with you without disclosing that it was happening,” Trial Tr. 764:4–8 (Grant), on August 13, 2020, Mr. Sweeney emailed Tim Cook, Phil Schiller, Matt Fischer and others threatening that Epic would be “in conflict with Apple on a multitude of fronts—creative, technical, business, and legal.” DX-3906.002. Later that day, Epic sued Apple. Dkt. 1.
304. Epic meanwhile unleashed its pre-meditated media blitz. Epic announced a “#FreeFortniteCup” to take place on August 23, inviting players for one last “Battle Royale” across “all platforms,” with prizes targeting Apple. DX-3724.001–.002; Trial Tr. 295:2–13 (Sweeney). In the same press release, Epic encouraged iOS *Fortnite* users to continue playing on other platforms: “If you’re left behind on iOS after the Chapter 2 - Season 4 launch, the party continues on PlayStation 4, Xbox One, Nintendo Switch, PC, Mac, GeForce Now, and through both the Epic Games App at epicgames.com (<https://www.epicgames.com/fortnite/mobile/android/getstarted>) and the Samsung Galaxy

Store (<https://apps.samsung.com/appquery/appDetail.as?appId=com.epicgames.portal>).” DX-3724.002; Trial Tr. 297:2–24 (Sweeney).

305. Epic released it’s a film called “*1980 Fortnite*,” purportedly “satirizing Apple and its policies.” Trial Tr. 295:16–17 (Sweeney).

306. [OMITTED]

307. [OMITTED]

308. [OMITTED]

N. Apple terminated Epic’s Developer Program account, as well as its Developer Agreement and DPLA with Apple

309. On August 14, 2020, Apple sent Epic another letter outlining in greater detail how the hotfix breached Epic’s agreements with Apple. DX-3460. Apple reminded Epic that it “reviews every app and app update to ensure that apps offered in the App Store are safe, provide a good user experience, adhere to [Apple’s] rules on user privacy, and secure devices from malware and threats.” DX-3460.001. Apple explained that it had “identified several violations [by Epic] of the Apple Developer Program License Agreement.” *Id.* These included violations of Sections 3.1(c), 3.2(f), 3.2.2, 3.3.3, 3.3.25, and 6.1 of the DPLA. DX-3460.001–.002. Apple therefore suspended Epic’s membership in the Apple Developer Program. DX-3460.003.

310. In the same letter, Apple once again informed Epic that it could cure its breaches and return to the App Store in good standing, giving Epic fourteen days to do so. DX-3460.003. Apple explained that failure to do so would result in termination of Epic’s membership in the Developer Program as well as the termination of Epic’s ability to access Apple’s intellectual property. DX-3460.003.

311. Epic did not fix *Fortnite*. Trial Tr. 171:10–172:2 (Sweeney). Consequently, Apple terminated Epic’s Developer Program account, as well as its Developer Agreement and DPLA with Apple, on August 28, 2020. Dkt. 428 ¶ 34.

O. Epic’s disregard for its own customers is apparent

312. Epic implemented its hotfix and declined to comply with Apple’s rules to fight over commissions paid on 5% of transactions on iOS while keeping the other 95% of its users off the iOS platform. Trial Tr. 227:18–228:12 (Sweeney). Apple offered to allow Epic to return *Fortnite* to the App Store, so long as Epic agreed to comply with its contractual commitments, but Epic declined. Trial Tr. 3918:18–3919:6 (Cook).

313. [OMITTED]

314. [OMITTED]

P. Nevertheless, Project Liberty remains ongoing

315. Despite the negative reaction to Epic’s tactics, Project Liberty remains an ongoing effort. Apple Ex. Depo. 7 at 95:1–3 (Shobin). During this time, Epic has not considered challenging Microsoft’s commission, Samsung’s commission, or Sony’s commission. Apple Ex. Depo. 7 at 95:19–96:8 (Shobin).
316. Epic has not attempted to submit to Apple a version of *Fortnite* that cures the deficiencies Apple identified in August 2020. Trial Tr. 171:10–172:2 (Sweeney). At trial, Epic’s own counsel referred to it as a “malicious actor.” Trial Tr. 3920:1–4 (Cook).

Q. Epic owes Apple at least \$3.6 million in unpaid commissions

317. Epic did not pay any of the 30% commission (\$3,650,315.70) owed on the revenue it collected through the hotfix. Dkt. 474 ¶ 3.
318. Epic has not attempted to repay the commissions it avoided with Epic Direct Payment. Moreover, Epic rejected the Court’s suggestion to disable the hotfix, agree to use IAP, relist *Fortnite* on the App Store, and deposit the commissions contractually owed to Apple into an escrow account. Sept. 28, 2020 Hrg. Tr. at 85:10–86:13. While Epic acknowledged that it also could “put[] the 30 percent that is coming in from the small number of Apple users who are still in existence . . . into escrow,” *id.* at 74:8–11, it has similarly declined to do so.

XII. The Evidence Demonstrates That The App Store Is A Two-Sided Game Transaction Platform

319. Two-sided transaction platforms have three fundamental features and each is a feature of the App Store. Ex. Expert 8 ¶¶ 43–44 (Schmalensee).
320. First, two-sided transaction platforms have as their main purpose the facilitation of observable transactions that simultaneously connect members of the two groups of users, often in sales transactions. Trial Tr. 1634:8–11 (Evans); Ex. Expert 8 ¶ 43 (Schmalensee).
321. Second, two-sided transaction platforms derive substantial value from strong bilateral indirect network effects. Trial Tr. 1634:16–18 (Evans); Ex. Expert 8 ¶ 43 (Schmalensee). Indirect network effects refer to the situation in which the value realized by members of one group of customers of a platform is higher when they have access to more members of the other group of customers with whom they could productively interact. Ex. Expert 8 ¶ 43 (Schmalensee).
322. Third, like other platforms, two-sided transaction platforms need to adopt pricing strategies, service provision strategies, and rules of behavior to attract two distinct groups of users and to facilitate productive interactions between them. Ex. Expert 8 ¶ 43 (Schmalensee); DX-3120.012.
323. Epic’s experts agree that the App Store is a “two-sided transaction platform” and exhibits each of these features. Trial Tr. 1347:7–9; 1612:7–9 (Evans); Trial Tr. 2295:22–24

(Cragg); *see also* Ex. Expert 1 ¶¶ 7(iii)(A), 144 (Evans). Yet even as Dr. Evans testified that the App Store is a two-sided transaction platform, he characterized the market as a distribution services market with the App Store providing “an input to” apps, without referring to a transaction market. *See* Trial Tr. 1454:2–16, 1455:12–1456:4 (Evans). While testifying that there is no difference between distribution services and transactions as he uses the terms, Trial Tr. 1379:23–25 (Evans), Dr. Evans contradicted himself also by testifying that he did not think it was “accurate[]” to characterize the App Store “as supplying only one-product transactions,” saying that the App Store is “providing distribution services that facilitate the distribution of apps from developers to consumers.” Trial Tr. 1635:14–22 (Evans). At the same, Dr. Evans said there was “no difference” between “distribution services” and “transactions,” despite the obvious economic differences. Trial Tr. 1635:23–25 (Evans). For example, Dr. Evans testified that app distribution “is an activity of developers who created an app wanted to have distribution channels to get their apps into the hands of consumers. So it is a – that is a retail or store-type activity,” Trial Tr. 1479:23–1480:2 (Evans), ignoring that a two-sided transaction platform involves *simultaneous* transactions between the two sides, Trial Tr. 1369:8–11 (Evans). In fact, under Dr. Evans’ conception, all sales transactions become “distribution services,” Trial Tr. 1479:16–1480:2 (Evans), thereby ignoring the specific characteristics of two-sided transaction markets and instead grouping retail distributions services with two-sided transaction markets. That led Dr. Evans to consider only whether there are competitive substitutes for app distribution services in the relevant market, rather than considering competition for transactions. *See, e.g.*, Trial Tr. 1503:19–1504:4 (Evans). And while Dr. Cragg agreed that the relevant product was transactions, his studies focused on gameplay, not on transactions. Trial Tr. 2314:12–15 (Cragg).

A. The App Store facilitates digital transactions

324. The App Store facilitates transactions that simultaneously involve developers and users—downloads, app updates, and in-app purchases that enhance the user’s experience with the app. Ex. Expert 8 ¶¶ 44, 55–58 (Schmalensee). The App Store cannot make a sale to one side of the platform without simultaneously making a sale to the other. Ex. Expert 8 ¶¶ 44, 55–58 (Schmalensee). The product, therefore, is transactions. Trial Tr. 2032:1–3 (Lafontaine).
325. The App Store creates a platform through which developers can publish their apps and from which a user can download the application. Trial Tr. 2026:14–24 (Lafontaine); Ex. Expert 8 ¶¶ 55–58 (Schmalensee).
326. Users gain greater value from the App Store with more selection in terms of quality apps, and app developers gain greater value from developing iOS apps for distribution through the App Store when there are more potential users on the other side of the platform. Ex. Expert 8 ¶ 50 (Schmalensee).
327. A successful interaction—a download, an app update, or an in-app purchase—will result in a transaction simultaneously provided to the developer and the user. Ex. Expert 8 ¶ 55 (Schmalensee).

B. The App Store derives substantial value from strong bilateral indirect network effects

328. The App Store exhibits strong indirect network effects. Greater consumer participation makes the App Store more attractive to developers and greater developer participation means more high-quality iOS apps that make the App Store and iOS devices more attractive. Trial Tr. 935:24–936:1 (Fischer); Ex. Expert 8 ¶ 50 (Schmalensee). As Mr. Cook testified, “by having such a large number of apps that are free on the store, it increases the traffic to the store dramatically. And so the benefit somebody gets that’s charging is they get a much higher audience to – to sell to than they would otherwise if there weren’t free apps there.” Trial Tr. 3988:23–3989:5 (Cook).
329. In order to encourage consumers’ use of the App Store, Apple does not charge consumers access or transaction fees on the App Store Platform. Trial Tr. 2063:6–8 (Lafontaine) (“[W]hat side [of the platform] pays is a design issue . . . the goal is to attract as many consumers as possible.”); Ex. Expert 8 ¶ 51 (Schmalensee). When developers pay a nominal fee of \$99 per year to participate in the Apple Developer Program, they can access an array of powerful tools to create high-quality apps and to offer them on the App Store, which in turn increases the value of the platform. Ex. Expert 8 ¶ 51 (Schmalensee). As Epic’s principal economist recognized, Apple’s nominal fee for developers “stimulates the supply of apps,” which makes iOS devices more attractive to potential users. Trial Tr. 1474:18–19 (Evans); Ex. Expert 8 ¶ 50 (Schmalensee). An increasing user base, in turn, helps attract additional app developers who are hoping to gain access to these users. Ex. Expert 8 ¶ 50 (Schmalensee).
330. The availability of apps and services in the iOS ecosystem contributes to the appeal of Apple devices. Ex. Expert 8 ¶ 50 (Schmalensee). To increase this appeal, Apple focuses on making sure that the App Store facilitates the discovery and purchase of new apps and in-app content of high quality, and that customers are satisfied with the App Store. Ex. Expert 8 ¶ 52 (Schmalensee).
331. Apple’s continuous updates of its hardware also generate indirect network effects, because improving the devices that use a particular operating system will make that operating system more attractive to developers, which will in turn affect consumer demand. Ex. Expert 8 ¶ 116 (Schmalensee).
332. The App Review process itself generates indirect network effects by reassuring consumers that Apple’s App Store is a safe and secure place for consumers to download apps. Trial Tr. 1085:1–12 (Kosmynka) (“We want to make sure that the App Store is a great place for customers to find safe and trusted apps and a great opportunity for all developers. That’s the entire mission.”); Ex. Expert 8 ¶ 52 (Schmalensee). Developers, too, recognize that the review process creates value for the whole ecosystem. Ex. Expert 8 ¶ 52 (Schmalensee). As one developer stated, Android has “[n]o review process. Yes, it’s easier on the developer, but it’s detrimental to the whole ecosystem.” DX-4626.092. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Ex. Expert 11 ¶ 57 (Rubin).

C. Apple has adopted pricing strategies, service provision strategies, and rules of behavior to attract both consumers as well as developers and to facilitate productive interactions between them

333. Successful two-sided platforms must ensure that there are a large number of participants on both sides of the platform and that transactions on the platform are as easy, safe, and reliable as possible. These are defining characteristics of the App Store. Trial Tr. 2747:14–25 (Schiller) (describing work undertaken to stay competitive among other digital storefronts).
334. Apple has consistently recognized that maintaining the App Store requires it to attract and retain both users and developers. Ex. Expert 8 ¶ 45 (Schmalensee); *see also supra* § IX. Apple competes vigorously for users and developers. *See supra* §§ VII & X.
335. Apple works very hard to attract and support game app developers on that side of the platform. Ex. Expert 8 ¶ 46 (Schmalensee); *see supra* §§ VII–IX.
336. Apple’s technical support for its game developers is also recognized as industry-leading. *See supra* § VIII.
- 336.1 There are many examples of Apple undertaking extraordinary efforts to support various developers. *See, e.g.,* Trial Tr. 2729:7–10 (Schiller) (describing allowing third-party apps on the App Store in response to developer feedback); Trial Tr. 2799:17–2800:8 (Schiller) (describing improvements to refund process based on developer feedback); Trial Tr. 2808:19–2809:3 (Schiller) (describing introduction of cross-platform and cross-wallet play in response to developer feedback); Trial Tr. 2833:15–24 (Schiller) (describing updating of App Store Guidelines in response to developer feedback).
- 336.2 With respect to Epic in particular, as detailed *supra* § X.C., Apple provided substantial technical support for Epic and *Fortnite* to persuade Epic to continue to devote resources to writing and improving iOS games.
337. Apple also provides its developers with business, marketing, and promotional support, free of charge—to ensure that they have success on the App Store. Ex. Expert 8 ¶ 51 (Schmalensee). It even promotes apps that directly compete with Apps developed by Apple. Trial Tr. 955:24–956:7 (Fischer) (describing promotion of Disney Plus, Hulu, and Paramount Plus, which compete with Apple TV Plus).
338. Apple works just as hard to attract users and keep the installed base of device users happy on the other side of the platform. In order to do so, Apple has to make sure its users are not worried about security or privacy, and that it is easy for them to find interesting apps. *See supra* § VIII.C–D; Ex. Expert 8 ¶ 47 (Schmalensee).
339. Apple has also continually improved the functionality and design of the App Store to keep iOS users engaged and active on the platform. *See supra* § VIII.D; Trial Tr. 2119:12–19 (Hitt) (“ . . . There has been a dramatic improvement in the capabilities of the iOS platform due to Apple’s investments, and that has improved the types of services that developers

can access and the types of games that can be made available, and that has increased the quality of output in the games transaction market.”); Ex. Expert 6 ¶¶ 191–97 (Hitt).

340. Two-sided transaction platforms establish and enforce clear rules of behavior to prevent platform participants from reducing the value of the platform to others. That is another defining characteristic of the App Store. Ex. Expert 8 ¶ 52 (Schmalensee). Indeed, Dr. Evans previously recognized that “[t]here isn’t much controversy that Apple’s rules have enabled it to create a high-quality app ecosystem for the iPhone.” Trial Tr. 1482:6–13 (Evans). At trial, Dr. Evans testified that that article did not conclude Apple abused any such rules. Trial Tr. 1482:15–18 (Evans).
341. While the key tenets of the App Store Guidelines have remained consistent over time, some aspects of the Guidelines have evolved—and each change has benefited consumers and developers. *See supra* § VI; Trial Tr. 2833:15–24 (Schiller); Trial Tr. 1084:12–25; 1124:12–15 (Kosmyka).

XIII. The App Store Supplies One Relevant Product: Game App Transactions

342. As a two-sided transaction platform, the App Store is thus best understood in the context of this case as supplying only one relevant product: game app transactions. Trial Tr. 2034:5–13 (Lafontaine) (noting that the product at issue in a case “will matter in determining what the right product market is, not in terms of definition, but which one is relevant”); Ex. Expert 8 ¶ 11 (Schmalensee).
- 342.1 “The product at issue is the set of transactions that are relevant to the parties in this case.” Trial Tr. 2032:19–20 (Lafontaine). Game app transactions fall within “natural boundaries,” just as, for example, women’s shoes do:

And so, you know, shoes, women’s shoes, we have high heels; we have flats. It’s—you know, even though some people might not see these different types of games as similar. It’s also the case that in the aggregate, there is substitution between them. And the same thing with different types of shoes, and we still treat them as shoes.

Trial Tr. 2042:10–15 (Lafontaine).

343. Game app transactions make up a sizeable segment of all app transactions. Ex. Expert 6 ¶ 117 (Hitt). In 2018, for example, game app transactions accounted for [REDACTED]—in revenue from transactions on the App Store. Trial Tr. 2126:16–19 (Hitt); Ex. Expert 6 ¶ 117 (Hitt). Indeed, game app transactions are responsible for the [REDACTED] of revenue in the App Store. DX 4178.006 ([REDACTED]); PX-0059.007 ([REDACTED]). Game app transactions are distinct from other app transactions for several reasons. Ex. Expert 6 ¶ 116 (Hitt); Ex. Expert 7 ¶¶ 22–35 (Lafontaine).

344. First, the industry and the public recognize a distinct market for digital game app transactions.
- 344.1 For example, many of the transaction platforms' user interfaces, including those of the App Store, Google Play, and the Amazon Appstore, reflect the distinction between game transactions and non-game transactions, often categorizing "games" into a separate tab of apps. Trial Tr. 3205:4–11 (Schmid); Ex. Expert 6 ¶ 126 Fig. 35 (Hitt); Ex. Expert 7 ¶ 26 (Lafontaine); DX-5552; *see also* Trial Tr. 933:12–13 (Fischer); DX-3913.007 ([REDACTED]). This reflects the recognition by the platforms that consumers sometimes visit the platforms looking for games, and would benefit from having the games gathered in one location. Ex. Expert 7 ¶ 26 (Lafontaine). On the App Store in particular, editors consider a different set of factors when curating games than they do when curating other apps. *Id.*
- 344.2 Apple's internal business structure also recognizes this distinction: At Apple, there were two heads of business development for the division spearheading the App Store—one for games and one for all nongaming categories. Trial Tr. 3205:4–11 (Schmid); Ex. Expert 6 ¶ 127 (Hitt); *see also* Trial Tr. 3226:8–12 (Schmid). Apple tracks the categories differently, as well; for instance, Apple routinely tracked "Games" billings separately from other elements of the App Store business. DX-4178.006; *see also* DX-4399.008 (same).
- 344.3 Games involve interactive experiences; games need not be competitive. Trial Tr. 1241:16–1242:18 (Allison). For example, Fortnite Party Royale is a game mode within *Fortnite* that includes movies and live concerts from top artists, and Fortnite Creative is a game mode that allows players to create their own games and rules. Trial Tr. 1246:20–1247:7 (Allison); Trial Tr. 1365:16–1366:1, 1367:25–1368:10, 1373:22–1374:12, 1374:13–1376:6 (Weissinger) (testimony agreeing that Creative Mode includes gameplay and game mechanics).
345. Second, game app transactions are a distinct product because they exhibit peculiar characteristics and uses. Ex. Expert 7 ¶ 26 (Lafontaine). Non-game apps serve a variety of other useful purposes. Ex. Expert 6 ¶ 117 Fig. 30 (Hitt). Dr. Evans conceded multiple times that game transactions on the App Store are *not* substitutes for non-game transactions on the App Store. Trial Tr. 1642:16–24, 1641:7–13 (Evans). Dr. Cragg contradicted Dr. Evans on this point, asserting the opposite and claiming that all nongame transactions are substitutes for game transactions. Trial Tr. 2301:19–2302:1 (Cragg).
346. Third, game app developers often use specialized technology to create game apps. Trial Tr. 3226:23–3227:13 (Schmid); Ex. Expert 7 ¶ 26 (Lafontaine). For example, middleware tools like Unity and Epic's Unreal Engine are designed primarily for game developers, and game developers tend to "really push the limits of what graphics processing can do" to the extent that they are "in a different category" from other developers as a result. Trial Tr. 3226:23–3227:13 (Schmid); Ex. Expert 6 ¶ 265 (Hitt). As discussed above, there are several other technologies designed uniquely to improve game apps. *See supra* § VIII.B.

347. Fourth, game apps have distinct developers as game developers, including Epic, who tend to specialize in the development of game apps. Trial Tr. 3226:13–22 (Schmid); Ex. Expert 6 ¶ 125 (Hitt). For instance, among the set of developers who had sold at least one game or item of in-app content in 2019, 88% of their App Store revenue was derived from game apps. Ex. Expert 6 ¶ 125 (Hitt). [REDACTED] DX-3248.019–.020, .031; *see also* Trial Tr. 3351:15–17 (Schmid).
348. Fifth, game app transactions differ in pricing structure from other app transactions. Steam adopted a 30% commission structure for its PC game app store before the App Store opened. Trial Tr. 2725:23–2726:9 (Schiller). And games, in general, monetize in different ways than do other apps. Trial Tr. 2045:5–6 (Lafontaine) (“The monetization of different apps are different.”); Trial Tr. 2188:25–2189:4 (Hitt); Trial Tr. 3227:14–24 (Schmid); Ex. Expert 6 ¶¶ 6, 121–23 (Hitt).
- 348.1 For instance, game apps make nearly all of their in-app purchase revenue from non-subscriptions. Trial Tr. 2188:25–2189:2 (Hitt); Trial Tr. 3230:1–20 (Schmid); Ex. Expert 6 ¶ 122 (Hitt). This differs from other major categories of apps. Ex. Expert 6 ¶ 121–22 (Hitt); *see* Trial Tr. 2188:25–2189:4 (Hitt). Music, fitness, and some other apps make virtually all of their revenue from subscriptions. Ex. Expert 6 ¶¶ 6, 121–23 & fig. 30 (Hitt); *see also* Trial Tr. 2188:25–2189:4 (Hitt). Among the top subscription apps for fiscal year 2019, for example, none were game apps. PX-0608.16.
- 348.2 There also is considerable variation in the average transaction price between app genres, and, in particular, between game apps and other apps. Ex. Expert 6 ¶ 124 (Hitt). The average transaction price for game apps is \$9.65, while the averages for other app genres range between \$7.11 for photo and video apps and \$14.10 for health and fitness apps. Ex. Expert 6 ¶ 124 (Hitt).
- 348.3 Similar variation is found in the average download price for apps. Ex. Expert 6 ¶ 124 (Hitt).
349. Sixth, game apps are distributed by specialized vendors. The set of transaction platforms and devices available for game apps differs from the set of transaction platforms for all apps. Ex. Expert 6 ¶ 117 (Hitt); Ex. Expert 7 ¶ 34 (Lafontaine).
- 349.1 Some of these devices are specifically designed for games and not other kinds of apps. Ex. Expert 6 ¶ 117 (Hitt); Ex. Expert 7 ¶ 34 (Lafontaine). For instance, all the main consoles—PS4, Nintendo Switch, and Xbox One—are designed with gaming as their primary purpose (but may have other functionality as well). Trial Tr. 556:4–5 (Wright) (“People buy an Xbox because they want to play games”); Trial Tr. 583:8–13 (Wright) (testifying that an Xbox can stream video from Netflix or Hulu); Trial Tr. 697:19–20 (consoles are designed for “the single purpose [of] entertainment”); Ex. Expert 6 ¶ 117 (Hitt).

349.2 Similarly, other game transaction platforms focus almost exclusively on game transactions, including the PlayStation Store and Nintendo eShop. Ex. Expert 7 ¶ 34 (Lafontaine); Ex. Expert 8 ¶ 104 (Schmalensee).

350. Seventh, platforms providing game app transactions are subject to unique and emerging competitive pressures, such as cloud-based streaming services. Ex. Expert 8 ¶¶ 104, 107 (Schmalensee). For instance, Nvidia's GeForce Now platform became available in February 2020 and allows players to stream over 850 games, with 2,500 games to be added, through web browsers or the GeForce Now client. Trial Tr. 422:12–15, 427:4–17, 429:11–14, 461:13–19 (Patel). This soon will include *Fortnite* on iOS, with a planned launch in October 2021. Trial Tr. 177:1–12 (Sweeney); Trial Tr. 477:7–15, 526:15–18 (Patel). And the only third-party app stores that Epic has identified as having sought to be offered through the App Store are “gaming app stores,” and not “any other kind of store.” Trial Tr. 1552:22–1553:8 (Evans). In the same way, non-game-apps are subject to different competitive pressures, and are affected by new technologies and devices, like Fitbit, that may not affect game apps. Ex. Expert 6 ¶ 6 (Hitt).

350.1 Epic witnesses testified that there were “differences” between the experience of gaming on streaming and on a native app, but did not attempt to establish that games on streaming and a native app were not substitutes. Trial Tr. 429:22–430:2 (Patel). GeForce is “extremely responsive, and one cannot detect any lag between the inputs and the characters onscreen actions.” Trial Tr. 469:5–13 (Patel).

350.2 Similarly, Epic's witnesses testified that web apps may be substitutable for “certain types of apps” but are not often substitutes for advanced games with significant performance and storage needs. Trial Tr. 711:10–18 (Grant).

XIV. The App Store and Other Game Transaction Platforms are Substitutes

A. For developers, game transactions on other transaction platforms are substitutes for game transactions on the App Store

351. Many developers make game transactions across several game transaction platforms simultaneously. Trial Tr. 3231:18–3232:15 (Schmid); Ex. Expert 6 ¶¶ 27–54 (Hitt). To do so, developers have to “engineer” the game for each platform. Trial Tr. 634:21–23 (Wright). It is easier to do this for certain coding pairs, like Xbox and PC or MacOS and iOS, because of the similarity between the APIs. Trial Tr. 673:1–6 (Grant). And some of Apple's “biggest game developers will have games on many different platforms. Sometimes those games are cross-platformed.” Trial Tr. 3207:8–18 (Schmid). In Mr. Sweeney's words, “we live in a multiplatform, multi-ecosystem world now.” Trial Tr. 297:25–298:5 (Sweeney); DX-3199.001. And as Dr. Athey testified, “most important apps are on both platforms [iOS and Android] and multihoming is common.” Trial Tr. 1769:2–3 (Athey).

352. Development across platforms is particularly pronounced among top game developers. Almost one third of smartphone owners in the United States also own a console, and about half own a tablet. Trial Tr. 1366:14–21 (Evans). Unreal Engine supports the creation of

apps which can run on at least eight different platforms. Trial Tr. 117:19–22 (Sweeney). Data from App Annie shows 83% of the top 100 downloaded iPhone game apps were available on both the App Store and Google Play; among the top 100 downloaded Android phone game apps, 95% were available on both platforms. For the top 100 game apps by estimated revenue from paid downloads and in-app purchases, the corresponding figures are 99% and 100% respectively. Ex. Expert 6 fig. 2 (Hitt).

353. To take just two examples of highly successful games that are available on the App Store *and* many other transaction platforms: Minecraft, one of the best-selling video games of all time, Trial Tr. 647:24–25 (Wright), is on the App Store as well as virtually every other game transaction platform, such as Google Play, the Microsoft Store, the Nintendo eShop, and the PlayStation Store, Ex. Expert 6 ¶ 33 (Hitt). Consumers made in-game purchases across each of these platforms. Ex. Expert 6 ¶ 33 & fig. 4 (Hitt); DX-3918. And Roblox, another hugely successful game (that even contains many games within a single app without separate functionality, Trial Tr. 569:24–570:4, 572:1–7 (Wright); Trial Tr. 1075:10–1076:10 (Kosmyinka); PX-0305.002), is available on the App Store as well as the Microsoft Store, the Amazon Appstore, and Google Play, with purchases being made on each of these platforms, Ex. Expert 6 ¶ 34 & fig. 5 (Hitt).
354. Indeed, new technologies, including evolving video game developer tools, have enabled developers to create games for a broader set of platforms—making substitution increasingly easy. Ex. Expert 6 ¶ 42 (Hitt). For example, the Unity engine supports development for 20 platforms, allowing developers to create one software build that can be distributed on any of Unity’s supported platforms. *Id.* Similarly, developers using the Unreal Engine may distribute exclusively on the App Store, exclusively on another platform, or on both iOS and other platforms. Trial Tr. 117:21–25 (Sweeney); Trial Tr. 665:19–23, 666:6–15 (Grant).
355. Epic can and does distribute *Fortnite* through a variety of channels. Ex. Expert 6 ¶¶ 72–76 (Hitt). *Fortnite* is available through the Epic Games Store, the Nintendo eShop, the Xbox Marketplace, the PlayStation Store, the Samsung Galaxy Store, and GeForce Now, and was previously available on the App Store and Google Play. Ex. Expert 6 ¶¶ 35, 151 & fig. 6 (Hitt).
- 355.1 Prior to being released on iOS in March 2018, *Fortnite* had already attracted almost 64 million user accounts on PlayStation, Xbox, and PC. Ex. Expert 6 ¶ 38 (Hitt); Trial Tr. 1337:19–21 (Weissinger) (*Fortnite* was “doing incredible” and “basically a cultural phenomenon” by the time of iOS launch). The single largest *Fortnite* platform is, and has been, PlayStation. Ex. Expert 6 fig. 6 (Hitt). iOS was usually the fourth most popular *Fortnite* platform. *Id.*; see also DX-3743.020 (showing *Fortnite* revenue on PlayStation far exceeding revenue on iOS for Q4 2019). And *Fortnite* continued to grow on other platforms following the iOS release—for instance, *Fortnite* rapidly became successful on the Nintendo Switch, a game console that is also similar to smartphones in size and portability, following the game’s launch on that platform in June 2018. Trial Tr. 2145:23–2147:25 (Hitt) (describing growth of *Fortnite* users following the launch of the Nintendo Switch); Trial Tr. 696:6–11 (Grant) (describing similarities in screen size, portability, and

other features between smartphones and the Switch); Ex. Expert 6 ¶¶ 87–91 (Hitt). As Mr. Sweeney acknowledged at trial, the point of releasing *Fortnite* on iOS was to “open up *Fortnite* to a much wider audience than the PC or console audience that we had so far reached,” demonstrating that he considered the platforms substitutable. Trial Tr. 111:20–22 (Sweeney). And of the 12.3 million concurrent players that attended Travis Scott concert in *Fortnite*, only 2 million were iOS users. Trial Tr. 1294:10–22 (Weissinger).

355.1.1 Mr. Weissinger testified that Apple leaked details related to the Travis Scott concert, but he confirmed that any such leak was limited to certain art being placed on Apple’s Italian storefront for a few minutes before being taken down. Trial Tr. 1445:20–1446:4 (Weissinger). After that incident, Mr. Weissinger emailed his Epic colleagues that he “kn[e]w Apple can keep secrets” but didn’t “know about Google.” Trial Tr. 1408:9–12 (Weissinger); DX-5542. Mr. Weissinger also testified that Epic experienced leaks with several other distributors, including Sony, Microsoft, Nintendo, and Tencent. Trial Tr. 1406:4–16 (Weissinger).

355.2 Epic agreed to keep identical pricing across Microsoft, Sony, and Nintendo for V-Bucks, acknowledging that those companies were concerned about competition from mobile or PC platforms for transactions. “Making it more advantageous to buy on mobile than on Console is not an option,” Epic wrote. DX-3364.001. [REDACTED]. DX-3437.002. [REDACTED]
[REDACTED]
[REDACTED] DX-4493.002; DX-4519.002–.003; Trial Tr. 198:10–21 (Sweeney). Epic has even kept the price of V-Bucks higher on PCs to prevent its consumers from engaging in arbitrage between platforms. Apple Ex. Depo. 8. at 102:2–6, 8–16, 18–103:5, 7–12 (Vogel). Epic’s VP of Business Development has described the company’s pricing restrictions as “a little anticompetitive.” Apple Ex. Depo. 2 at 180:3–22 (Kreiner).

355.2.1 Epic also recognized that Apple and console platforms compete on price. In an internal 2018 email chain, Epic employees discussed “talk[ing] to Sony Microsoft or Nintendo about subscription costs” because “Apple and Google offer 15% for recurring subs.” DX-3129.001.

355.3 Epic encouraged users who previously played *Fortnite* on iOS to play on other platforms after Apple prevented users from downloading *Fortnite* through the App Store. Ex. Expert 6 ¶ 99 (Hitt). This included, after *Fortnite*’s removal from the App Store, communications that urged customer to shift to other digital game transaction platforms. DX-3724.002. Users have done so, spending far more time on alternative platforms than iOS. Ex. Expert 6 fig. 14 (Hitt).

- 355.4 Epic’s post-*Fortnite* “case study” assessing iOS *Fortnite* players’ behavior after *Fortnite* was removed from the App Store does not demonstrate a lack of substitutability between game app transaction platforms. First, it applies only to Epic’s specific circumstance and does not estimate a market-wide event. Ex. Expert 6 ¶ 245 (Hitt). It created an anomalous situation where iOS users had access to an old version of *Fortnite*, but not a new one, at the same time that *Fortnite* was removed from Google Play, leaving smartphone consumers with few means of playing *Fortnite*. Ex. Expert 6 ¶¶ 244–47 (Hitt). Meanwhile, all other substitute games continued to be available to iOS users. Ex. Expert 6 ¶ 246 (Hitt). Thus, the “case study” cannot predict what would happen on an App Store-wide level if Apple had increased the price of game transactions. *Id.* And importantly, Dr. Evans agreed that his analysis of this event did not suggest that 60–90% of game console owners play games only on consoles. Trial Tr. 1366:5–10 (Evans).
356. Epic has benefited from the competition among game app transaction platforms. For instance, it obtained substantial marketing and tech support benefits from Apple. *See supra* § XI.C. Epic expected and sought those benefits in explicit exchange for launching *Fortnite* on iOS before Android. DX-3732.003. [REDACTED] . DX-4335.007–.008. [REDACTED] DX-4457.001.
357. Epic also pressured Sony to adopt cross platform play. DX-3433.001–.002. And Epic then used the availability of cross-platform play on iOS to persuade Microsoft to allow the same thing. Trial Tr. 253:19–254:1 (Sweeney); DX-4036. This opportunity for cross-platform play is one way that platforms—including, as Mr. Sweeney agreed, the App Store—compete. Trial Tr. 236:19–237:2 (Sweeney).
- B. For consumers, game transactions on other transaction platforms are substitutes for game transactions on the App Store**
358. Consumers of game apps own multiple devices and have access to multiple game platforms that are reasonably interchangeable *for the purpose of game transactions*. Trial Tr. 2134:22–2135:18 (Hitt); Ex. Expert 6 ¶¶ 56–59 (Hitt); Ex. Expert 10 ¶¶ 16–17 (Hanssens).
- 358.1 Epic’s market definition depends on the incredible assertion that, for example, “downloading *Star Wars: Knights of the Old Republic* for \$9.99 on Steam is not a substitute for downloading *Star Wars: Knights of the Old Republic* for \$9.99 on your iPad,” or that “buying V-Bucks through your iPhone browser is not a substitute for buying V-Bucks on your Windows laptop in the *Fortnite* app.” Trial Tr. 1643:15–1644:5 (Evans).
- 358.2 In an about face, however, Dr. Evans *contradicted* his own opinion, and conceded during his rebuttal testimony that “for conducting that [in-app] transaction, that given the prices, that [other platforms] are alternative avenues and *therefore substitutes* in that sense for – for doing the contraction – doing the transaction.” Trial Tr. 2407:6–12 (Evans) (emphasis added). Dr. Evans continued:

I think what you – I think what you meant to say is that there are other platforms that could – could support a developer for conducting transactions, and those platforms, such as having Netflix, say, run on a PC, is competitor for having Netflix app on the – on the iPhone. So I think we’re talking about not the developer as the substitute. I think we’re talking about the platforms as substitutes.

And, yes, I agree that in that – in that context, the ability to substitute between platforms, that they are competing in – in – in – in that sense.

Trial Tr. 2407:16–2408:1 (Evans) (emphasis added). Dr. Evans apparently thus *does* consider app transactions on other platforms to be “substitutes” for transactions on iOS, undermining the entire premise of his market definition.

359. Public and internal surveys substantiate significant cross-ownership of devices. For instance, a 2019 Pew Research Center study showed that 81% of U.S. consumers own a smartphone, 75% own a desktop or laptop computer, and about 50% own a tablet. Ex. Expert 6 ¶ 57 (Hitt). Dr. Athey opines that consumers own at least 2–3 general purpose devices. Ex. Expert 4 ¶ 27 (Athey). And internal Apple surveys show that among iOS device owners, about 30–40% own a Mac notebook or desktop, 55–65% own a Windows PC laptop or desktop, 20–30% own a game console, and around 21–22% own a non-iPad tablet. Ex. Expert 6 ¶ 57; DX-3174.003–.004; DX-3465.227–.236. Dr. Evans estimates that up to 44% of U.S. iPhone users also use a Mac computer, Trial Tr. 1631:22–25 (Evans), a platform described by Epic as an “open market.” Dkt. 1 ¶ 4.
360. Market research on gamers in particular has found that around 55–60% of U.S. gamers play games on more than one device, with almost 30% playing on more than two devices. Ex. Expert 6 ¶ 61 (Hitt); DX-4170.010. [REDACTED]
[REDACTED] DX-4170.011. Market data cited by Ms. Wright shows that “there are roughly three billion gamers in the world, and “more than 50 percent of those gamers play on another device” other than mobile devices. Trial Tr. 550:3–7 (Wright). Ms. Wright also agreed that “the majority of people who play games on console platforms also play on mobile platforms.” Trial Tr. 631:19–22 (Wright).
361. A survey conducted for this matter confirmed that individuals that use the App Store, including to download games, have access to alternative devices and platforms. Among consumers who transact through the App Store, 71% regularly use a laptop, 48% regularly use a desktop, 41% regularly use a game console/handheld game device, 27% regularly use a non-iOS smartphone, and 23% regularly use a non-iOS tablet. Ex. Expert 10 ¶ 16 & fig. 7 Ex. 7 (Hanssens). This means an overwhelming majority (81%) of App Store users regularly use a device besides their iOS device. Ex. Expert 6 ¶ 58 (Hitt).
362. The same survey, considering more broadly both devices regularly used and devices one could access to use, found that 86% of App Store users regularly use or had available a laptop, 64% a desktop, 61% a console/handheld game device, 56% a non-iOS smartphone, and 48% a non-iOS tablet. Ex. Expert 6 ¶ 58 (Hitt); Ex. Expert 10 ¶ 16 Ex. 7 (Hanssens).

That means 95% of App Store users regularly used, or could have regularly used, a device besides their iOS device. Ex. Expert 6 ¶ 58 (Hitt); Ex. Expert 10 ¶ 16 (Hanssens); *see also* Trial Tr. 3537:18–25 (Professor Hanssens explaining that Professor Rossi’s survey produced similar results). As Ms. Wright testified, “Xbox users also have smart phones.” Trial Tr. 538:19–21 (Wright).

363. Consumers not only have access to and use multiple devices; they also use those various devices to make game transactions. Trial Tr. 2136:23–2137:21; 2139:18–2140:15 (Hitt); Ex. Expert 6 ¶ 61 (Hitt); Ex. Expert 7 ¶ 39 (Lafontaine). [REDACTED]
[REDACTED] Ex. Expert 6 fig. 4 (Hitt). And consumers typically slow their sending on iOS game apps after they purchase a console, further showing substitutability by consumers. Trial Tr. 2150:3–2151:19 (Hitt). [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] DX-3248.022.
364. *Fortnite* illustrates the substitutability of game transaction platforms for the purpose of making transactions from consumers’ perspectives. Trial Tr. 2136:18–2137:21 (Hitt); Ex. Expert 6 ¶¶ 35–39 & fig. 6 (Hitt).
365. Among consumers who used iOS to play *Fortnite*, 80% regularly used a laptop, 59% a desktop, 79% a console/handheld game device, 38% a non-iOS smartphone, and 33% a non-iOS tablet. Ex. Expert 10 Ex. 8 (Hanssens). Among these consumers, 57% used their laptops to play games, 41% used their desktops, 79% used game consoles/handheld game devices, 27% used a non-iOS smartphone, and 18% used a non-iOS tablet. Ex. Expert 10 ¶ 17 Ex. 8 (Hanssens). In total, 97% of iOS *Fortnite* players regularly use at least one type of other device besides their iOS devices and 94% of iOS *Fortnite* players play games on devices other than their iOS device. Trial Tr. 3533:18–3534:18 (Hanssens); Ex. Expert 6 ¶ 58 (Hitt); Ex. Expert 10 ¶ 17 (Hanssens). Epic’s own engineering fellow, Mr. Grant, is an example: While he played *Fortnite* on a console with his family, he preferred to primarily play *Fortnite* on his iPad. Trial Tr. 742:22–744:2 (Grant).
- 365.1 Counsel for Epic suggested during cross-examination that Professor Hanssens’ methodology was flawed because he “implicitly assumed that respondents who regularly use a console use the device to play games.” Trial Tr. 3564:22–23 (Hanssens). Of course, the entire *thesis* of Epic’s case is that game consoles are not interchangeable with mobile devices because they have a limited utility (game play), and Mr. Sweeney himself testified that game consoles are “focused specifically on games and entertainment experiences.” Trial Tr. 138:18–22 (Sweeney); *see also* trial Tr. 3590:25–3591:7 (Hanssens) (explaining that “these consoles are specifically designed for game playing”).
366. Because of *Fortnite*’s cross-play capabilities, these consumers could access *Fortnite*—at least until Epic’s hotfix—and enjoy a comparable experience on their iOS device and a different device. Trial Tr. 107:11–24 (Sweeney); Ex. Expert 6 ¶ 52 (Hitt); *see also* Trial

Tr. 3250:22–3251:8 (Schmid) (“I personally played Fortnite. My family played Fortnite. We connected over it. My son played it on the iPad. My wife played it on the PlayStation. I played it on my iPad with the controller. It was a really awesome thing to be able to bring to the users on the App Store.”). As Mr. Penwarden testified during his deposition, “[a] Fortnite player can choose to play on their phone in the morning and on a console in the evening if that’s what they so choose.” Apple Ex. Depo. 5 at 137:7–9 (Penwarden). Epic “run[s] the same content—or substantially similar content and same game across multiple platforms.” Apple Ex. Depo 5 at 136:3–7 (Penwarden).

367. For *Fortnite* and the many games like it on the App Store that have cross-wallet and cross-progression functionality, an iOS user need not *ever* make a single paid transaction on the App Store to enjoy all the paid features of the game on an iOS device. Trial Tr. 2139:18–2140:15 (Hitt); Ex. Expert 6 ¶¶ 50–53 (Hitt). That is because a consumer could purchase *Fortnite*’s paid content (like V-bucks) on any platform—including the Epic Games Store—and then use that content while playing the game on an iOS device. Trial Tr. 197:1–25 (Sweeney); *see also* Trial Tr. 3233:21–3235:9, 3236:14–3237:11 (Schmid) (providing two live demonstrations of the ease by which a user can purchase in game content on a mobile browser). Apple thus imposed no restriction on consumers’ ability to switch between platforms freely. Ex. Expert 6 ¶¶ 47–53 (Hitt); Apple Ex. Depo. 5 at 136:20–137:9 (Penwarden).
368. Epic’s user data from March 2018 to July 2020 shows that *Fortnite* users exemplify the substitutability of game transactions across game transaction platforms. Trial Tr. 2136:18–2137:21 (Hitt); Ex. Expert 6 figs. 13, 14 (Hitt). 10.2% of the total hours played on *Fortnite* during that time period were played on iOS, and just 13.2% of revenues from in-game purchases came from iOS. DX-4763; Trial Tr. 2138:9–2139:17 (Hitt). During that timeframe, 35.9% of users that played *Fortnite* on iOS devices also played *Fortnite* on another device. Trial Tr. 2135:20–2136:17 (Hitt); Ex. Expert 6 fig. 13 (Hitt). For certain platforms, the share of users that accessed *Fortnite* through a second (or more) platforms ranged to as high as 32–54%. Trial Tr. 2135:20–2136:17 (Hitt); Ex. Expert 6 fig. 13 (Hitt). Indeed, according to Epic’s own analytics, “Fortnite players who play on mobile are *most likely* to play on other platforms (~38%).” DX-5535.001 (emphasis added). Mr. Sweeney stated that he “would be very upset” if these analytics were “not accurate.” Trial Tr. 196:1–4 (Sweeney).
369. Consumers also engage in *Fortnite* transactions across a number of platforms, with the PlayStation 4 generating 46.8% of total *Fortnite* revenues from March 2018 through July 2020 and Xbox One generating the second-highest share of revenues at 27.5%. DX-4766.001. iOS ranked fifth among all *Fortnite* accessible platforms in terms of revenue, with just 7.0% of total revenue, “roughly half of the revenue on Switch.” *Id.*; Trial Tr. 186:8–9 (Sweeney).
370. Users who accessed *Fortnite* from more than one platform—called “multi-homers”—were responsible for a disproportionate number of transactions. Trial Tr. 2135:7–2139:17 (Hitt). Between January and July 2020, for example, iOS multi-homers accounted for 86.8% of *Fortnite* revenue from iOS device users while iOS single-homers accounted for only 13.2%. Ex. Expert 6 ¶ 73 & fig. 14 (Hitt). What is more, 15.8% of iOS *Fortnite* users

made paid transactions exclusively *outside* the App Store. Trial Tr. 2169:18–2170:2 (Hitt); Ex. Expert 6 ¶ 74 (Hitt); DX-4769. By comparison, only 5.6% exclusively used the App Store and 2.8% used both the App Store and another platform. Trial Tr. 2170:10–15 (Hitt); Ex. Expert 6 ¶ 74 (Hitt). The majority of iOS users made no paid transaction at all. Trial Tr. 2169:18–25 (Hitt); Ex. Expert 6 ¶ 74 (Hitt).

370.1 Even under Dr. Evans’ analysis, which looks to minutes-played rather than revenue-generated, 40% of the minutes played were by consumers who multi-homed. Trial Tr. 1518:10–24 (Evans).

371. There also are multiple, specific examples that demonstrate iOS users could and did in fact switch between platforms to make transactions for *Fortnite*. Ex. Expert 6 ¶ 81 (Hitt).

372. [REDACTED]. DX-4133.004. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. DX-4133.012.

373. There is similar evidence of substitution following the launch of *Fortnite* on the Nintendo Switch in June 2018. Trial Tr. 2146:1–2148:25 (Hitt); Ex. Expert 6 ¶¶ 86–93 (Hitt). Epic’s user data shows that before the launch, iOS users accounted for approximately 29% of *Fortnite* revenue. Ex. Expert 6 fig. 19 (Hitt). That figure steadily dropped in the four months following *Fortnite*’s launch on Switch, falling to 24% in September 2018. *Id.* Over that same time, Switch users grew to account for 21% of *Fortnite* revenue. *Id.* Dr. Cragg conceded that the data showing *Fortnite* revenues before and after the launch of *Fortnite* on the Nintendo Switch indicated that Switch consumption was “taking up some fraction of the total and pushing down the fraction of all else,” and that this trend could be called “substitution.” Trial Tr. 2321:6–15 (Cragg); *see also* PX-1023 (Dr. Cragg’s analysis showing that in the months following the launch of *Fortnite* on the Nintendo Switch, users substituted from iOS, PC, and other console platforms to the Nintendo Switch).

374. Epic’s user data reveals a similar pattern with respect to the share of time played on *Fortnite*. Ex. Expert 6 ¶ 92 (Hitt). From May 2018 to September 2018, iOS users’ share time fell from 23% to just 9%. *Id.* That corresponded with an increase from 0% to 31% for users on Nintendo Switches. *Id.*; Trial Tr. 2147:12–2148:25 (Hitt) (“... And what that indicates is that these consumers who adopted the Switch are shifting some of their activity that they would otherwise do from iOS to somewhere else, presumably to Switch, and that’s an indication of substitution. Consumers have a reason to move and they do.”).

375. Thus, Epic’s user data shows iOS *Fortnite* users substantially switched the amount of time and money they spent from iOS to Nintendo Switch following the introduction of *Fortnite* on the Switch. Trial Tr. 2146:1–2148:25 (Hitt); Ex. Expert 6 ¶¶ 86–93 (Hitt). This is consistent with more general data from the App Store: The amount spent on gaming transactions on the App Store grew more slowly for consumers that downloaded a gaming

console or PC app—such as the Xbox app or Nintendo Switch Online app—than those who did not. Ex. Expert 6 ¶¶ 82–85 (Hitt).

376. Epic understood these dynamics as its “Free *Fortnite*” campaign shows. Ex. Expert 6 ¶¶ 98–99 (Hitt). Following the removal of *Fortnite* from the App Store, Epic told its users they could and should play *Fortnite* on other platforms—clear proof that Epic understood its users could substitute between platforms to make transactions for *Fortnite*. Ex. Expert 6 ¶¶ 98–99 (Hitt). Epic in fact retained the vast majority of iOS *Fortnite* users’ pre-hotfix revenue in the four months after the hotfix, in large part due to this multi-homing by consumers. Trial Tr. 2144:15–2145:5 (Hitt) (“The net effect was – is that Epic retained between 81 and 88 percent of the expected *Fortnite* spending following the hotfix event.”); Ex. Expert 6 ¶ 97 (Hitt).

C. Apple competes with other game transaction platforms

377. The App Store competes with other game transaction platforms on different types of devices, including consoles, PCs, and mobile devices. Trial Tr. 3865:23–3867:5 (Cook); Ex. Expert 6 ¶ 23 (Hitt); *see also supra* § X.
378. Apple recognizes that gamers are an important source of growth and has competed aggressively to attract app developers that develop popular videogames, such as Epic. Trial Tr. 3238:14–3239:22 (Schmid).
379. Apple’s records demonstrate that it has continued to treat the App Store as in direct competition with game transaction platforms geared toward consoles, PC games, and mobile devices. Ex. Expert 6 ¶ 111 & figs. 26, 27 (Hitt); *see also supra* § X.
380. Apple has always viewed Google Play as a significant competitor, including with respect to games transactions. Trial Tr. 3239:23–3240:2 (Schmid); *see also supra* § X. There is evidence of platform competition with the Samsung Galaxy store, as well. Ex. Expert 6 ¶ 142 (Hitt); *see also supra* § X. And Apple competes with at least the three major game console platforms for game transactions. Ex. Expert 6 ¶¶ 111, 114 (Hitt); *see also supra* § X.
- 380.1 Several of Epic’s witnesses testified that console manufacturers sell hardware at a loss and recoup those losses through the subsequent sale of software. Trial Tr. 551:24–13 (Wright); Trial Tr. 1350:18–1351:7 (Weissinger); Trial Tr. 1476:2–8 (Evans). But Epic did not seek admission of any documents supporting that testimony, and no such documents are in the record. See Trial Tr. 1736:3–20 (Evans) (“[REDACTED]”). [REDACTED]
[REDACTED]
[REDACTED]. DX-5322; *see also* Trial Tr. 1736:21–24 (Evans).

381. Qualitative evidence demonstrates that game app platforms (including [REDACTED], Microsoft, [REDACTED], and [REDACTED]) similarly regard themselves as being in competition with Apple and with

other game app platforms. Ex. Expert 6 ¶ 114 (Hitt); DX-4172.009–.010; DX-3760 at 1, 23, 24; DX-3629 at 16; DX-4200.002; DX-3582.004–.005; DX-5523.054, .056; DX-5363 at 18; Trial Tr. 643:11–24, 647:1–13 (Wright); DX 5532.011; *see also* Trial Tr. 2325:12–2332:6 (Cragg) (Dr. Cragg acknowledging he had no opinion about whether these platforms regarded one another as competitors). [REDACTED]

[REDACTED] Ex. Expert 7 ¶ 38 (Lafontaine).

- 381.1 As Ms. Wright put it, mobile is “a vast part of the overall gaming industry,” so Microsoft looks “at mobile as a segment of the game industry as a whole,” and “[i]n any industry analysis, mobile would have to be part of the consideration.” Trial Tr. 638:9–11, 639:1–2, 643:1–2 (Wright). Microsoft has been looking at mobile as part of the gaming industry for at least 10 years. Trial Tr. 642:14–17 (Wright). And it continues to do so today. DX-5523.008–.011, .053–.054.
382. Epic itself considers the App Store and other game platforms to be substitute transaction platforms. Ex. Expert 6 ¶¶ 96, 99 (Hitt). For instance, when planning the launch of *Fortnite* on mobile platforms, Epic decided to “focus [its] engineering efforts” on iOS instead of trying to launch *Fortnite* on both iOS and Android simultaneously. DX-3732.002–.003. Epic also thought it would receive “extra support” for *Fortnite* from Apple compared to Google. DX-3732.003.
383. As early as 2012, Mr. Sweeney remarked publicly, “we have a lot of platforms coming together. There are the tablet platforms, there are the smartphone platforms, and computers, you know, PC and Macintosh, and then there are consoles, Xbox 360, PlayStation 360, Wii, and some new handheld dedicated gaming devices, and God knows what else. This is too many platforms. And we’re seeing now, iPad sales have surpassed the sales of desktop PCs. That’s a real revelation to me. This is a product that wasn’t invented until a few years ago, and it’s basically supplanting the personal computer industry as we know it. Over time, these platforms will be winnowed down into a much smaller set of competing platforms. You know, there might be one or two or maybe three winners worldwide across everything—computers, game platforms, smartphones. So we should expect a lot of consolidation here, and winners and losers according to who picks the right directions and executes successfully on them.” DX-3768 at 26:1–23; Trial Tr. 243:10–244:9 (Sweeney).
- 383.1 During closing arguments, the Court asked about the possibility of a market for “mobile gaming,” comprising digital game transactions on mobile devices. Trial Tr. 4091:4–7. However, there is no evidence on which the Court could make findings as to a hypothetical market for mobile gaming.
- 383.2 Epic did not propose mobile gaming as a relevant market, and the experts for both parties did not address such a market. That gap in the evidence was made apparent at closing arguments, during which Epic’s counsel could not say whether tablets would be included in that hypothetical market. Trial Tr. 4091:4–4092:3. There are

numerous tablet platforms and least one mobile gaming console platform (Nintendo Switch) that would have to be included in such a market.

383.3 Limiting the relevant product market to digital game transactions on mobile devices would run counter to the evidence above showing that consumers and developers for game transactions substitute across many platforms—not just mobile platforms. As Mr. Sweeney testified, “a great game will succeed wherever it is sold.” Trial Tr. 259:11–18 (Sweeney). And Ms. Wright from Microsoft confirmed that Microsoft considers mobile to be part of the gaming industry, Trial Tr. 638:9–11, 639:1–2, 643:1–2 (Wright), consistent with Microsoft’s recognition in its 10-K that its Xbox platform “face[s] competition from various online gaming ecosystems and game streaming services, including those operated by Amazon, Apple, Facebook, Google, and Tencent,” DX-5523.011.

383.4 Even if a mobile gaming market could be defined, there is no allegation or evidence that Apple has monopoly or market power in a market for mobile gaming (in fact Android occupies a greater market share than Apple) and no allegation or evidence that Apple has caused anticompetitive effects in such a market. This is another reason why Epic must be held to its burden of proving the relevant market: All of its follow-on analyses depend on its market definition, and without a properly defined market, there can be no liability.

XV. The Evidence Does Not Support A Single Market In “iOS App Distribution”

384. Epic has failed to prove the existence of a single-brand market in “iOS App Distribution.” See Trial Tr. 1512:3–4 (Evans) (Dr. Evans conceding that Epic’s alleged iOS app distribution market is a single-brand market). And importantly, Dr. Evans has offered *no* opinion as to market power or competitive effects except as to the markets he attempted to defined.

384.1 Dr. Evans attempted to define a market for iOS app distribution that expressly excludes in-app purchases (including subscriptions), which he claimed take place in a market separate from the distribution market. Trial Tr. 1351:15–17, 1355:9–15, 1502:15–1503:18 (Evans). But Dr. Evans never defined a price for those distribution services other than the commission for in-app purchases, which again, are not included within the market he defined. Even in the face of direct questions from the Court, Dr. Evans was unable to identify the market in which in-app transactions occur. Trial Tr. 1354:3–1355:5 (Evans).

385. Epic has failed to prove that apps in general, and iOS apps in particular, are all similarly situated with respect to the competitive conditions each type of iOS app faces on other platforms and through other services.

386. Clustering is an economic and legal concept that refers to the combination of individual product markets where products may be bought and sold independently. Ex. Expert 7 ¶ 29 (Lafontaine).

387. A classic example of clustering involves hospital services. Hospitals offer many distinct products and services, ranging from specialized surgery with few if any substitutes, to tests that can also be obtained at outpatient facilities, to medicines that are sold over the counter at ordinary supermarkets and drug stores. Ex. Expert 7 ¶ 30 (Lafontaine). As another example, while physical games stores like GameStop may have competed with retailers like Wal-Mart for game distribution in the 1990s and early 2000s, that does not mean GameStop competed with Wal-Mart for all products sold by Wal-Mart. Trial Tr. 1247:20–1248:10 (Allison).
- 387.1 An additional example is a grocery store that includes a wine and liquor department, is located in a neighborhood with liquor stores, and imposes a uniform restriction on its suppliers (across all departments). The market definition analysis on a claim by a wine distributor in this situation would be based on substitutes for wine and liquor, not on the conduct across the store—if the claim were brought by a flower distributor, the analysis would change. Trial Tr. 2011:24–2013:13, 2033:11–18 (Lafontaine). But the market definition analysis would not change if the liquor stores with which the grocery store competed also offered other items like crackers, just as the market definition in this case is unaffected by the fact that the Epic Games Store offers Spotify (and a small number of other non game apps added shortly before trial). Trial Tr. 2013:14–2014:13, 2015:2–24 (Lafontaine).
- 387.2 Still another example is the Office Depot and Staples proposed merger for office supplies sold to business customers as a cluster. Trial Tr. 2009:5–2010:7 (Lafontaine). In that case, the Federal Trade Commission excluded ink and toner from its market definition because ink and toner faced different competitive conditions. *Id.* Applying that same logic to this case, that would mean an App Store cluster market—which Epic’s experts did not attempt to defend—would exclude gaming transactions, because they face different competitive conditions to other app transactions. Trial Tr. 2010:8–20 (Lafontaine).
388. Epic is attempting to cluster otherwise independent product markets in a single market. Trial Tr. 2037:9–17 (Lafontaine). Such clustering is permissible only if competitive conditions are similar for the individual product markets. Ex. Expert 7 ¶ 29 (Lafontaine). Dr. Evans agreed that he has not defined a cluster market. Trial Tr. 1641:4–6, 2445:19–2446:5 (Evans).
389. Game and non-game apps cannot be clustered in the same relevant market because the competitive alternatives available to game developers and consumers who play games are different than those available to other app developers and consumers. Trial Tr. 2041:5–24 (Lafontaine); Ex. Expert 6 ¶¶ 116–28 (Hitt); Ex. Expert 7 ¶ 34 (Lafontaine). There are many categories of apps in the App Store of widely varying nature, from shopping, to finance, to food and drink, to health and fitness, to games, and may more. PX-0413.007. Epic has a large number of game competitors different from apps such as a food app or Waze or the many other apps in the App Store. Trial Tr. 94:10–95:2 (Sweeney) (listing Epic’s competitors); *see also* Trial Tr. 955:24–956:7 (competitors to the Apple TV Plus app include Disney Plus, Hulu, Paramount Plus, Peacock, and many others) (Fischer). The frequency with which apps are free-to-download; monetize through the App Store; and

monetize through in-app purchases, subscriptions, or both differs among different genres of apps. Ex. Expert 6 ¶ 121 (Hitt). The average transaction price charged by developers also differs between game and non-game apps. Ex. Expert 6 ¶ 124 (Hitt). And due to the different monetization strategies, commission rates differ between game and non-game apps as well. Trial Tr. 2188:25–2189:4 (Hitt) (comparing the monetization mechanisms of game and non-game apps); Ex. Expert 6 fig. 33 (Hitt).

389.1 The standards for a cluster market cannot be evaded, as Dr. Evans attempted to do, by contending that a market should be defined by the conduct across the App Store. Markets are defined by reasonable substitutes, not by the conduct alleged. Trial Tr. 2005:15–21 (Lafontaine). “Conduct can affect more than one market.” Trial Tr. 2006:12–22 (Lafontaine). For example, in a merger case where the conduct is the merger, the analysis would look to the relevant markets affected by the merger. *Id.* The same would be true in the case of a market for steel: the analysis would have to take into account that there may be different versions of steel products and different customers. Trial Tr. 2035:18–22, 2039:4–20 (Lafontaine).

389.2 A SSNIP test for a group of products that do not meet the standards for a cluster market is economically meaningless. Trial Tr. 2016:18–24 (Lafontaine).

390. In addition, the evidence shows that competitive conditions are similar for game transactions while they differ from other apps. *See supra* §§ X.B & XIII; Ex. Expert 7 ¶ 34 (Lafontaine).

XVI. The Evidence Does Not Support Epic’s Effort To Narrow The Relevant Market To An iOS Aftermarket

391. Epic’s Complaint alleges that “Apple’s mobile device customers” are “locked in to Apple’s ecosystem,” Dkt. 1, ¶ 159, and does not even mention an “aftermarket.” Contrary to the complaint, Dr. Evans advances a *different* relevant market theory, of a foremarket for smartphone operating systems, tied to an alleged aftermarket for iOS app distribution services. *Compare* Dkt. 1 ¶¶ 51–57, 109–18, *with* Ex. Expert 1 ¶¶ 43, 92 (Evans); Trial Tr. 1485:18–1486:18 (Evans). And important, Dr. Evans offered *no* opinion on market power or competitive effects in *any* market other than the one he attempted to define.

391.1 Although Dr. Evans discussed what he termed the “app-based digital economy,” he confirmed that he was not opining that the app-based digital economy was a relevant market in this case, and that if there is no harm to competition to the market or markets relevant to this case, Apple’s purported role in the digital economy is irrelevant. Trial Tr. 2390:8–15 (Evans).

392. The evidence does not support Dr. Evans’ to define the relevant market as an iOS aftermarket. Ex. Expert 6 ¶¶ 223, 225 (Hitt). In fact, when Dr. Evans prepared a presentation to the FTC on behalf of a different developer regarding many of the same Apple practices alleged here, Dr. Evans suggested there was only a single “mobile platform

app services market,” a different market from the one he alleges in this case. Trial Tr. 1627:6–21, 1742:24–1743:2 (Evans); DX-5549.

A. Apple does not sell a smartphone operating system

393. There is no foremarket for “smartphone operating systems” in which Apple competes because Apple does not sell “smartphone operating systems.” Trial Tr. 1630:3–5, 1750:18–19 (Evans); Trial Tr. 1883:3–11 (Schmalensee) (Q: Do you agree with Dr. Evans that there is a foremarket in which iOS competes with other operating systems for mobile devices in which Apple has market power? A: No. There – there really isn’t a market there. I mean, you think of a market as someplace where things are bought and sold by buyers and sellers. And the Apple iOS has never been licensed separately or distributed separately from devices. And the other system he considered, Android, has always been free. It – it’s just not – not an ordinary market.”). Apple “designs, manufactures and markets mobile communication and media devices and personal computers, and sells a variety of related software, services, accessories and third-party digital content and applications.” DX-4918.004. In other words, Apple sells *devices*, which are fully integrated into the iOS ecosystem and include the operating system and App Store. Trial Tr. 3890:23–3891:12 (Cook). In this way, Apple’s devices are similar to consoles, which also have operating systems integrated into the devices. Trial Tr. 668:8–23 (Grant). Yet Dr. Evans’ proposed foremarket does not include or account for any of the manufacturers that actually make devices in competition with Apple, Trial Tr. 1629:3–24 (Evans), even though Apple accounts for just 16 percent of smartphones sold in the world outside of China (down from 22 percent in 2012), Trial Tr. 1630:6–9 (Evans); Trial Tr. 2725:3–21 (Schiller) (describing “big, competitive” market of mobile phone competition).

393.1 Although Epic introduced evidence that Mr. Cook at one time said, “We compete against Google on the operating system side,” PX-1721, Mr. Cook made clear that Apple “compete[s] against [Google] devices that” Google’s operating system enables, Trial Tr. 3891:7–8 (Cook), and that Apple “obviously benchmark[s] [Google’s operating system], but customers don’t buy operating systems; they buy devices,” Trial Tr. 3891:11–12 (Cook). Thus, while Apple competes with Google to design the best operating system, there is no relevant *market* for operating systems, because the operating system is just one component of the devices that Apple sells.

394. Just as Apple does not sell “smartphone operating systems,” consumers do not purchase operating systems. Trial Tr. 2027:10–2028:6 (Lafontaine); Ex. Expert 7 ¶¶ 51, 61–63 (Lafontaine). Indeed, iOS cannot be purchased or upgraded at any price separately from purchasing a device. Ex. Expert 8 ¶ 61 (Schmalensee).

394.1 The iPhone competes with dozens of smartphones designed and marketed by multiple well-funded smartphone manufacturers. Ex. Expert 7 ¶ 51 (Lafontaine). These competitors consistently release new models, and if the iPhone were not a competitive offering (i.e., if Apple charged too high a quality-adjusted price, or did not continuously develop its technology and designs to attract new smartphone

users or switchers), then its customer base would quickly evaporate. Ex. Expert 7 ¶ 51 (Lafontaine).

- 394.2 The competition in the smartphone market imposes constraints on Apple. Trial Tr. 2027:15–18 (Lafontaine); Ex. Expert 7 ¶ 51 (Lafontaine). Dr. Evans initially conceded that he was not claiming that Apple had monopolized his alleged foremarket for smartphone operating systems, though he later asserted that Apple has “monopoly power” in that market. Trial Tr. 1628:19–24, 1639:24–1640:11 (Evans).
- 394.3 Although Dr. Evans claimed that the market for smartphone operating systems was a two-sided transaction market (like the App Store), Trial Tr. 1612:1–12 (Evans), he failed to offer any coherent explanation of what transactions are facilitated in that market, saying: “So the transactions from an economic standpoint that are taking place in the smartphone OS market are the – the interactions between app users and app developers being able to standardize on that operating system and being able to use the APIs jointly and services provided by that – by that operating system,” Trial Tr. 1620:19–1621:3 (Evans), and conceded that there are no “paid transactions that take place between developers and consumers in your smartphone operating system market,” Trial Tr. 1621:20–23 (Evans). Dr. Cragg, for his part, once again contradicted Dr. Evans, testifying that he did *not* view iOS as a two-sided transaction platform. Trial Tr. 2295:25–2296:5 (Cragg).
395. In addition, even under Epic’s own market definition theory, iOS app distribution would have to include tablet distribution as well. Ex. Expert 6 ¶¶ 230–33 (Hitt). “[A] tablet [is] really a large smartphone.” Trial Tr. 697:3–6 (Grant). More significantly, consumers and developers can transact both on iPhone and iPads through the App Store. Ex. Expert 6 ¶¶ 231–32 (Hitt). Developers use the same tools to create apps for iPhone and iPads, and developers can provide apps that are compatible with both iPhones and iPads. Ex. Expert 1 ¶ 43 n.3. Many apps on the App Store can be downloaded on either an iPhone or an iPad, and, when consumers purchase a paid-to-download app on an iPhone, they can install it on an iPad (and vice versa) without making an additional purchase. Ex. Expert 6 ¶ 232 (Hitt).

B. Game consumers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues

396. The App Store rules at issue in this case have not changed since the App Store was introduced in 2008: iOS has always been a closed system, and the App Store has been a “walled garden” since inception. PX-0880.021–.032; Ex. Expert 7 ¶ 52 (Lafontaine). Consumers have easy access to information about game transactions—they can read extensive information about game options on iOS online. Ex. Expert 7 ¶ 51 (Lafontaine).
397. Consumers of games are not locked into a single durable foremarket product. Trial Tr. 2025:8–18 (Lafontaine); Ex. Expert 7 ¶ 51 (Lafontaine). Rather, they multi-home across devices and have other alternatives for accessing various game transaction platforms. Trial Tr. 2025:8–18 (Lafontaine); Ex. Expert 7 ¶ 46 (Lafontaine); *see also* Trial Tr. 1630:17–19, 1631:18–21, 1632:1–3 (Evans) (Dr. Evans testifying that “almost all game console owners

own smartphones,” “50 percent of smartphone owners also have a tablet,” and “almost all iPhone users [in the United States also] have a Mac or a PC”). Notably, Dr. Evans agreed that the same switching costs he identified for iOS would apply as well to users who switch from MacOS, yet he did not claim that Apple has market power in the market for which Macs (or MacOS) are sold. Trial Tr. 1632:9–23 (Evans).

398. iOS users who play games typically multi-home across devices. Ex. Expert 6 ¶ 58 (Hitt); Ex. Expert 7 ¶ 39 (Lafontaine).
- 398.1 As discussed above, consumers have access to many game app platforms. Ex. Expert 6 ¶ 58; Ex. Expert 8 ¶ 72 (Schmalensee). This includes each of the categories of games discussed by Dr. Cragg: core, midcore, and casual games, and the most popular game categories such as puzzle and arcade games. Trial Tr. 2310:14–2311:13 (Cragg). Most smartphone owners, including owners of iOS devices, also have a personal computer and about half have a tablet. Ex. Expert 6 ¶ 58 (Hitt); *see also supra* § XIV.B. Professor Hanssens’ survey shows that 99% of App Store users regularly used or have available another device besides their iOS device. Ex. Expert 10 ¶ 16 (Hanssens).
- 398.2 These trends apply to consumers who participate in game transactions as these gamers not only have multiple devices but also play games on multiple devices. Ex. Expert 6 ¶ 58 (Hitt); Ex. Expert 10 ¶¶ 16–17; *see also supra* § XIV.B. Indeed, this is the very “magic of *Fortnite*,” which provides “the ability to play together with people you know in the real world and have a shared social experience, even if you are in different places on different devices.” Trial Tr. 107:15–18 (Sweeney).
- 398.3 Significantly, consumers can *purchase* games and in-game content on multiple platforms they own or have access to. Ex. Expert 6 ¶¶ 59, 61–62 (Hitt); Ex. Expert 7 ¶¶ 46–47 (Lafontaine); *see also* Trial Tr. 3231:18–3232:15 (Schmid). For example, a consumer who owns a game console has the opportunity to enter into a game transaction—i.e., participate in the relevant antitrust market—using their console rather than their iOS device. Ex. Expert 7 ¶¶ 37–41 (Lafontaine).
- 398.4 As discussed above, empirical evidence shows that consumers do in fact make game transactions across multiple devices and through different game transaction platforms. Ex. Expert 6 ¶¶ 60–63, 70–76 (Hitt); *see also supra* § XIV.B.
- 398.5 Gamers that play *Fortnite* illustrate this phenomenon: While the majority of *Fortnite*’s iOS users do not make any paid *Fortnite* transactions on any devices, for those that do make paid transactions, it is often on competing game transaction platforms, not the App Store. Ex. Expert 6 ¶ 74 (Hitt). Almost twice as many of *Fortnite*’s iOS users transacted *exclusively* outside the App Store than transacted inside the App Store (exclusively or as one of multiple platforms). *Id.*
399. Consumers can and do switch from iOS devices to Android devices and vice versa. Trial Tr. 2120:25–2122:6 (Hitt); Trial Tr. 3868:19–3870:1 (Cook) (describing the Data Transfer

Project—a collaborative effort to make switching devices easier); Ex. Expert 6 ¶¶ 209–14 (Hitt); Ex. Expert 7 ¶ 51 (Lafontaine); Ex. Expert 10 ¶¶ 16–17 (Hanssens).

399.1 By some estimates, as many as 78 million people in the United States may purchase a new smartphone each year. Trial Tr. 2122:9–24 (Hitt); Ex. Expert 6 ¶ 210 (Hitt).

399.2 Apple competes with Android smartphone manufacturers for each of those purchases. Market research shows that among prior iPhone owners who had purchased a new phone, between 4% and 26% switched to a different operating system from their prior phone. Trial Tr. 2120:25–2122:6 (Hitt); Ex. Expert 6 ¶ 209 (Hitt); *see also* DX-4310.012 ([REDACTED]). As an economic matter, this is a meaningful number of consumers. Ex. Expert 6 ¶ 209 (Hitt). Epic focused on a 2013 Goldman Sachs report on switching costs, PX-0079; PX-0080, but switching costs between iOS and Android devices have declined over time. Trial Tr. 2849:7–21 (Schiller); 2854:7–2858:10 (Schiller) (TV shows and iTunes are now available on Android). Both Apple and Android device makers such as Samsung offer tools to assist customers in switching devices. Trial Tr. 3872:16–23 (Cook). There also are third-party password managers that operate cross-platform and facilitate moving devices. Trial. Tr. 2990:17–24, 3170:23–3171:6 (Schiller).

399.3 That 74–96% of iOS users choose not to switch to Android when they upgrade their phones is not evidence of lock-in in any event. Trial Tr. 2120:25–2122:6, 2122:25–2123:13 (Hitt); Ex. Expert 6 ¶¶ 209–10 (Hitt). Purchasers of a new iPhone often are satisfied with their iPhone purchase, and thus may simply prefer the iOS ecosystem compared to Android devices. Ex. Expert 6 ¶ 211 (Hitt); *see also supra* § VIII (discussing the significant investments Apple has made in improving the iOS ecosystem for consumers). Epic’s experts do not consider device satisfaction in offering their opinions on lock-in, nor do they attempt to quantify or otherwise measure switching costs. *See* Ex. Expert 4 ¶¶ 8–9, 11, 13, 20–34 (Athey); Trial. Tr. 2123:8–13 (Hitt). [REDACTED]

399.4 A 2018 Google survey, for example, found that the number one reason that iOS users would not consider an Android device in the future is because they prefer iOS. DX-3598.027; *see also* Ex. Expert 6 ¶ 211 (Hitt). Similarly, a 2015 Apple survey on Android to iPhone switchers found that the top reasons consumers switched to an iPhone were reliability and speed, followed by quality device construction, durability, and battery. DX-3441.006–.007.

399.5 Moreover, if the iPhone’s supposed lock-in effects persisted across upgrade purchases, consumers new to the market would not purchase the device to avoid potential lock-in. *See* Ex. Expert 7 ¶ 51 (Lafontaine).

- 399.6 Locked-in consumers also often express regret or dissatisfaction. Ex. Expert 7 ¶ 51 (Lafontaine). To the contrary, iPhone owners consistently exhibit a high degree of satisfaction. Ex. Expert 6 ¶ 211 (Hitt); *see also* DX-4312.043 [REDACTED]; DX-4495.044 [REDACTED]).
- 399.7 Epic cites an internal Apple email discussing “lock-in” to the Apple ecosystem stemming from Apple’s proprietary iMessage technology. PX-0416. But Mr. Weissinger testified that actions taken to make a game more attractive to users and promote their desire to play that game constitute “lock in.” Trial Tr. 1434:1–10 (Weissinger); *see also* DX-4652.003 (internal Epic email discussing “lock in” of *Fortnite* users stemming from price cut); Trial Tr. 2122:25–2123:7 (Hitt) (describing that high rates of customer retention are likely the result of customer preference because they “like the product [they] have”). This particular email involved an individual instance in which “the setup [for iMessage] was done incorrectly because you can easily turn off your iMessage.” Trial Tr. 3874:11–17 (Cook). In reality, iMessage does not prevent customers from switching because iMessages can be transferred to an Android device. Trial Tr. 3874:18–25 (Cook).
- 399.8 In another email Epic cites, Steve Jobs referenced the possibility that Apple might “tie all of [its] products together, so [its] further lock[s] customers into [the] ecosystem,” PX-0892.1, but Mr. Schiller explained that the “point” of this statement was that “we’re talking about your contacts, your calendar, and your email being able to be properly represented on all your devices, and that if we could create a way to do that for users in the next year, that we would have a better platform that they want to stay with,” Trial Tr. 2864:7–15 (Schiller). Mr. Schiller further explained that the use of the word “lock” meant “[s]imply that if customers like these – the way these products work, they’re going to want to stay with us.” Trial Tr. 2864:16–19 (Schiller). “It means making all the products work so well together people don’t want to leave.” Trial Tr. 3871:17–24 (Cook).
- 399.9 Epic also cites an internal Apple email discussing the iOS “platform [being] more sticky.” PX-842. “Sticky,” in this context, “means to have such high customer satisfaction that people don’t want to leave.” Trial Tr. 3870:16–21 (Cook). During his testimony, Mr. Schiller explained that the context for that email discussion was “a news story that Tim Cook saw about phishing emails . . . that are spam, try[ing] to steal your information and get your log-ons from websites and services” and that Apple was looking for ways to protect “people’s passwords and making sure that those aren’t easily given up to a phishing scam.” Trial Tr. 3167:19–3169:25 (Schiller). Mr. Schiller understood that Apple’s commitment to privacy, security and protecting users from spam would be an advantage that hopefully would make users would cause users to like to use our platform because it helps to protect their password, but in truth, users of Google’s ecosystem will also get some good password management features as well, and they will be good at it, too.” Trial Tr. 3169:7–22 (Schiller).

400. Consumers can make digital game transactions, including in Epic’s apps, without acquiring an alternative device. *See* Trial Tr. 2139:18-2140:15 (Hitt) (“ . . . you can buy V-Bucks on a web browser . . . so even if you can’t play Fortnite in a web browser, you can still buy V-Bucks and transact for Fortnite on a web browser . . .”); Ex. Expert 6 ¶¶ 51–54 (Hitt). Even consumers with a single device may have access to multiple platforms. Ex. Expert 7 ¶ 21 (Lafontaine). It is easy to use an iPhone to buy V-Bucks, for example, from Epic’s website using the Safari or Chrome browsers. *Id.* Epic is not alone: Developers typically have multiple ways to transact with consumers who play games. Ex. Expert 7 ¶ 54 (Lafontaine).

C. There is no reliable evidence that Apple’s conduct has increased user switching costs and mixing and matching costs, as described by Dr. Athey

401. Dr. Athey opines that Apple’s alleged restrictions have increased switching costs or user mixing and matching costs. Ex. Expert 4 ¶¶ 13, 56, 63, 76 (Athey). But these alleged costs disregard industry realities, are based on a but-for world that has not been properly specified and Dr. Athey has made no effort to measure or quantify the costs she identifies. Trial Tr. 1815:11–1816:2 (Athey); *see also* Ex. Expert 4 ¶¶ 8–9, 11, 13, 20–34 (Athey). Nor has she collected survey information regarding consumer preferences regarding switching. Trial Tr. 1777:18–24 (Athey).
402. In rendering her opinions, Dr. Athey did not cite any economic literature addressing switching costs, including any literature indicating that competition is always maximized when switching costs are reduced to zero, nor did she evaluate competition in a hypothetical scenario where switching costs would be zero. Trial Tr. 1813:22–1814:11 (Athey); *see also* Ex. Expert 4 ¶¶ 8–9, 11, 13, 20–34 (Athey). Instead, for her academic sources on switching costs, Dr. Athey relied on news articles, a European journal, and a biography of Steve Jobs. Trial Tr. 1813:22–1814:11 (Athey).
403. Dr. Athey’s opinion is also devoid of any evidentiary support: In forming her opinions, Dr. Athey did not review any Apple business documents produced in this litigation, any Epic documents produced in this litigation, or any third-party documents produced in this litigation. Trial Tr. 1794:12–18, 1794:25–1795:3 (Athey). In no previous case has Dr. Athey given an opinion on the competitive effects of conduct without reviewing the confidential business documents of the defendant. Trial Tr. 1796:14–23 (Athey). Dr. Athey also did not review deposition transcripts or expert rebuttal reports, including the rebuttals to her report, in forming her opinions. Trial Tr. 1796:24–1797:9 (Athey).
- 403.1 Part of the reason Dr. Athey did not review confidential business documents in this case is because of her relationship with Microsoft, which Epic presumably knew of when it chose to retain her. Trial Tr. 1797:10–18 (Athey). Dr. Athey’s relationship with Microsoft—a competitor of Apple’s—calls into question her credibility in this trial. *See* Trial Tr. 1799:2–16 (Athey). The nature of that relationship, however, remains opaque: counsel for Epic instructed Dr. Athey not to answer a question at her deposition regarding whether her current work for Microsoft relates to the issues in this case, Trial Tr. 1800:14–1801:8 (Athey), although it was revealed at trial that she prepared a presentation for Microsoft in October 2020 entitled, “Apple App Store Restrictions and [Redacted]: an Economic Perspective,” which covered

“middleware” and other issues related to this case, Trial Tr. 1802:21–25, 1804:14–1805:1 (Athey).

403.2 Dr. Athey did not perform any quantitative analysis or original surveys to determine the amount of increased switching costs that she contends are caused by the alleged Apple restrictions. Trial Tr. 1870:10–15 (Athey) (“THE COURT: Did you review data and did you analyze data? THE WITNESS: I did not do original analysis of data. THE COURT: And there’s no data attached to your report? THE WITNESS: No – no original data, no.”); *see also* Ex. Expert 4 ¶¶ 8–9, 11, 13, 20–34 (Athey). Dr. Athey provides no evidence quantifying any frictions that might arise when moving apps, purchases, or user data across mobile platforms and, accordingly, create significant app-related switching costs. Trial Tr. 1870:10–15 (Athey); *see also* Ex. Expert 4 ¶¶ 25, 52, 81, 85 (Athey). She described these as “frictions” even if consumers had to make only one extra click of a button to download a game. Trial Tr. 1854:14–19 (Athey). Moreover, it is the developers who “can choose to offer services that make it easy to move across these platforms if they so choose.” Trial Tr. 2157:2–4 (Hitt). They can allow consumers to sign on the same account and move content across multiple platforms. Trial Tr. 2157:6–8 (Hitt). Furthermore, even accepting Dr. Athey’s premise that “leaving an app and spending a minute or two on a web browser” is “friction,” it is “very small” compared to the “friction” people typically encounter in the physical world. Trial Tr. 2155:1–2156:10 (Hitt). In the physical world, the consumer would have to “walk across the street” to go to another store. Trial Tr. 2156:5–7 (Hitt).

403.3 Dr. Athey also did not evaluate whether Apple’s alleged restrictions would increase the time it takes to switch from an iPhone to an Android, nor did she determine the amount of time that it takes to switch from an iPhone to an Android. *See* Ex. Expert 4 ¶¶ 21–22, 24 (Athey). Indeed, Dr. Athey provides no evidence of the dollar estimate for switching from an iPhone to an Android phone at multiple price points or any evidence for the time and cost that would be incurred in order for a user to identify and re-install apps on a new mobile operating system after switching from iOS to that new platform. *See* Ex. Expert 4 ¶¶ 21–22, 24, 33 (Athey). Nor did Dr. Athey calculate the average amount of apps that must be repurchased when moving from iOS to a new operating system. *See id.* Finally, Dr. Athey did not determine the number of apps that a user would be required to repurchase if moving from iOS to a new platform. *See id.*

403.4 Dr. Athey contends that Apple has restricted what she called middleware, but was shown in court that such middleware is available on iOS.

403.4.1 For instance, the Steam mobile app is available on the App Store and allows Steam users to manage their Steam account, shop, and stay up to date on available games, Trial Tr. 1829:22–1831:6 (Athey), the Steam Wallet app allows users to manage their Steam account and buy games, Trial Tr. 1843:2–18 (Athey), and the Steam Link app supports streaming and remote play for Steam users on their iPhone or iPad, DX-5617; Trial Tr. 1843:24–1845:17 (Athey). Playstation and Xbox both have similar

apps that allow remote play of Steam games. Trial Tr. 1851:1–23 (Athey).

403.4.2 Likewise, GameClub is a subscription service for mobile games, including on iOS, that also offers family sharing. Trial Tr. 1852:10–1853:9 (Athey). GameClub competes with Apple Arcade, Apple’s subscription gaming service. Trial Tr. 1853:11–23 (Athey). In the GameClub app, a user can click on a game and will then be directed to that game’s app in the App Store where the user can see information about the game, reviews, and where the game may be downloaded. Trial Tr. 1855:16–1856:17 (Athey). The user will also see a link to the GameClub website. Trial Tr. 1857:8–13 (Athey).

404. Dr. Athey’s assertion that removing Apple’s design decisions, policies, and rules regarding the App Store, app review process, and app standards would reduce user switching costs ignores the possibility that each platform on which an app operates may require some form of customization in order to operate on that platform. Ex. Expert 6 ¶ 261 (Hitt). Dr. Athey does not address whether switching costs would still be reduced if each multiplatform app store utilizes different APIs or whether multiplatform app stores can ensure compatibility across different platforms. *Id.*
405. Dr. Athey’s demand for forced interoperability also ignores the reality that cross-device functionality is already common for apps today. Ex. Expert 6 ¶¶ 263–65 (Hitt); *see also* Trial Tr. 1817:16–1818:7 (Athey) (Dr. Athey discussing source that announces “good news” for individuals switching apps, telling them that “[t]hese days, most major productivity apps are readily available on both platforms [Android and iOS]”). Even to the extent Dr. Athey identified a source suggesting that developers often launch new apps on iOS because of higher in app spending by iOS users, she neglected to mention that this source also stated that developers understand that “Piracy on Android is a fact,” and that “[d]evelopers of paid apps who keep a close eye on their analytics often notice lots more people using them than have actually bought them on a store like Google Play.” Trial Tr. 1818:6–1819:12 (Athey).

D. Game developers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues

406. Apple’s terms with developers have been consistently and clearly communicated to developers. Trial Tr. 2028:3–6 (Lafontaine); Ex. Expert 7 ¶ 52 (Lafontaine). These terms—specifically including Apple’s policies regarding sideloading, its commission, and stores-within-stores—have not become more restrictive since their inception. Trial Tr. 2738:12–14 (Schiller) (App Store has been the only means to distribute apps on the iPhone “from the outset”). To the extent developer-facing terms have changed at all, it has been to developers’ benefit (e.g., lowering some commissions). *See supra* § VII.C; Ex. Expert 6 ¶ 268 (Hitt). And developers have known of the app review process since the launch of the App Store. Trial Tr. 2749:2–4, 16–20 (Schiller).

407. Like consumers, game developers are not invested in a single durable “smartphone operating system” product. Ex. Expert 7 ¶ 46 (Lafontaine). Game developers instead “multi-home” by developing apps for, and offering them for download on, multiple game transaction platforms. Trial Tr. 2124:4–2125:3 (Hitt); Ex. Expert 6 ¶¶ 24–46 (Hitt); Ex. Expert 7 ¶ 39 (Lafontaine).
408. Apple does not demand developer exclusivity, nor does it restrict the prices that developers charge on other platforms. Ex. Expert 7 ¶ 48 (Lafontaine). And as explained in detail above, *see supra* § XIV.A, extensive empirical evidence shows that many developers—especially larger developers—that create games for the App Store also develop games for other platforms and other operating systems reach consumers through those platforms. Trial Tr. 2124:7–2125:3 (Hitt) (“many of the large developers are on multiple platforms and many of them do offer these kinds of services.”); Ex. Expert 6 ¶¶ 27–35 (Hitt); Ex. Expert 8 ¶ 123 (Schmalensee).
409. For example, 83 of the top 100 downloaded iPhone game apps in 2019 were available on both the App Store and Google Play. Ex. Expert 6 fig. 2 (Hitt). Among the top 100 downloaded Android phone game apps, 95 were available through both platforms. *Id.* For the top 100 game apps by estimated revenue from paid downloads and in-app purchases, the corresponding figures are 99 and 100 percent, respectively. *Id.*
410. [OMITTED]
411. As but a few examples, Minecraft, one-of-the world’s best-selling video games, is available on the App Store, Google Play, Microsoft Store, Amazon Appstore, Nintendo eShop, and PlayStation Store, as well as directly from Minecraft’s website. Ex. Expert 6 ¶ 33 (Hitt). Roblox, a game with 150 million monthly active users in May 2020, is available through the App Store, the Microsoft Store, the Amazon Appstore, and Google Play. Ex. Expert 6 ¶ 34 (Hitt). And for *Fortnite*, Epic uses the Epic Games Store for *Fortnite* game transactions on Windows PCs, Windows tablets, and Mac computers; the Nintendo eShop for *Fortnite* game transactions on Nintendo Switch and Switch Lite; the Xbox Marketplace on the Microsoft Store for *Fortnite* game transactions on Microsoft’s Xbox One, Xbox Series X, and Xbox Series S; the PlayStation Store for *Fortnite* game transactions on PS4 and PS5; the Samsung Galaxy Store for *Fortnite* game transactions on Samsung-brand Android smartphones and tablets; and GeForce Now, a game streaming platform that consumers can access on a variety of devices including Macs, PCs, Chromebooks, Android devices, and iOS devices (in addition to, of course, the App Store and Google Play Stores prior to Epic’s implementation of the hotfix). Ex. Expert 6 ¶ 35 (Hitt).
412. Indeed, game developers choose the particular platforms for which to develop and release their games. Trial Tr. 2124:7–2125:3 (Hitt); Ex. Expert 6 ¶ 39 (Hitt). Depending on the size of the platform audience, the available developer tools, and numerous other factors, developers allocate resources across different transaction platforms based on their relative advantages. Ex. Expert 6 ¶¶ 41–42 (Hitt).
413. For example, when discussing the launch of *Fortnite* on mobile platforms, Epic decided to “focus [its] engineering efforts” on iOS—for which there was less “risk in . . .

compat[ability]&perf[ormance]”—as opposed to launching *Fortnite* for both iOS and Android devices simultaneously. DX-3732.002–.003. Epic even expected to leverage their focus on iOS to obtain “extra support” from Apple, DX-3732.003, underscoring Apple treatment of Google Play as a competing transaction platform, Ex. Expert 6 ¶ 111 (Hitt).

414. Moreover, developers can and do utilize substitute game transaction platforms to sell content to iOS users that can be used on their iOS devices. Ex. Expert 6 ¶¶ 77–93 (Hitt). 81% of iOS users regularly use other non-iOS devices where other game transaction platforms are available. Ex. Expert 6 ¶ 58 (Hitt). And game developers can make the content acquired through such transactions available for use on a customer’s iOS device. Ex. Expert 6 ¶ 78 (Hitt).
415. Again, *Fortnite* demonstrates how Epic can make transactions with iOS device users through alternative game transaction platforms. Ex. Expert 6 ¶ 73 (Hitt). Virtually all *Fortnite* users on iOS regularly use other devices that could be used to play *Fortnite* and conduct in-game purchases, and users who accessed *Fortnite* on iOS spent most of their time and money in regard to *Fortnite* on non-iOS devices and through game transaction platforms other than the App Store. *Id.* These transactions are facilitated by the cross-wallet and cross-progression functionality permitted by Apple. Ex. Expert 6 ¶ 78 (Hitt).
416. Because developers have the ability to substitute between the App Store and other platforms, they are not locked in to the App Store. Ex. Expert 6 ¶ 42 (Hitt).

E. Dr. Evans’s hypothetical monopolist tests fail to properly account for indirect network effects, invalidating his conclusions about the relevant antitrust product markets

417. Dr. Evans advances a hypothetical monopolist test (“HMT”) that, he says, purports to show that iOS operating systems and iOS app distribution are a relevant antitrust foremarket and aftermarket, respectively. Ex. Expert 1 ¶¶ 62–69, 139–44 (Evans).
418. An HMT is typically used to determine the relevant antitrust market when evaluating mergers. Trial Tr. 2018:7–23 (Lafontaine); Ex. Expert 8 ¶ 79 (Schmalensee). It asks whether a hypothetical monopolist in a candidate market could impose a small but significant and non-transitory increase in price (“SSNIP”) on its products, without causing so many customers to switch to a more affordable substitute that the price hike is no longer profitable. Trial Tr. 2018:19–23 (Lafontaine); Ex. Expert 8 ¶ 79 (Schmalensee). If the answer is yes, then the candidate market is the relevant antitrust market. Ex. Expert 8 ¶ 79 (Schmalensee). If the answer is no, then the candidate market is too narrow. *Id.* Although Dr. Evans claims to have conducted a SSNIP test, a SSNIP test could not accurately be performed in this case by any expert because there has been no price increase by Apple that could provide real-world substitution data (or other necessary data) to analyze. Trial Tr. 2023:6–12 (Lafontaine); Trial Tr. 2140:16–2141:3, 2234:19–2235:8 (Hitt).
419. The HMT is typically applied to *one-sided* markets. Ex. Expert 8 ¶ 80 (Schmalensee). Conducting an HMT for *two-sided* platforms—like smartphone operating systems, app distribution, and in-app purchase payment processing—is much more complex, and

requires multiple inputs that may be difficult to estimate. Ex. Expert 8 ¶ 82 (Schmalensee). Additionally, use of the HMT with single-brand markets, as Dr. Evans has done, is “not very valid” and “do[es]n’t provide much information” because by definition the single firm already has 100% of the market. Trial Tr. 2019:24–2020:17 (Lafontaine).

420. This is because two-sided platforms often exhibit indirect network effects. Trial Tr. 1896:13–18 (Schmalensee) (“[Dr. Evans has] neglected the strength of indirect network effects. In his prior writings [he’s] shown correctly that to do a proper market definition analysis involving a two-sided platform, one needs to know not only that there are indirect network effects but [how] strong they are. And [Dr. Evans] really has in effect ignored those effects.”); Ex. Expert 8 ¶¶ 2, 63 (Schmalensee). As discussed above, these effects are particularly pronounced in two-sided transaction platforms like the App Store. Ex. Expert 8 ¶¶ 56, 63 (Schmalensee); Trial Tr. 2080:11–13 (Hitt) (“It’s very common in two-sided markets for one side or the other to participate in transactions but not pay a price for that,” yet those “free” transactions are “an important source of value,” including for the App Store).
421. Indirect network effects create feedback loops, such that even small changes on one side of the market can, in the long run, cause large changes in the overall popularity of the platform. Trial Tr. 1896:21–1897:2 (Schmalensee) (“Indirect network effects generally magnify the impact of a price change.”); Ex. Expert 8 ¶ 29 (Schmalensee). For example, a price increase on side A of a platform will reduce participation on that side. Ex. Expert 8 ¶¶ 29, 85 (Schmalensee). While this initial impact may be small, it will *also* make the platform less attractive to participants on side B, leading to decreased participation on *that* side. Ex. Expert 8 ¶ 85 (Schmalensee). This, in turn will reduce participation on side A, and so on. *Id.* Since the HMT turns on responses to price increases, ignoring indirect network effects will generally lead to markets that are too narrow. Trial Tr. 1897:3–4 (Schmalensee); Ex. Expert 8 ¶ 85 (Schmalensee).
422. There is no consensus among economists about how to design HMTs to properly account for these indirect network effects. Trial Tr. 1668:5–1669:2 (Evans); Trial Tr. 2302:7–16 (Cragg); Ex. Expert 8 ¶¶ 81, 82 (Schmalensee). While Dr. Evans has proposed one approach, another economist believes it is conceptually flawed. Ex. Expert 8 ¶ 63 (Schmalensee). And even Dr. Evans himself has written that “even if it is technically possible to extend the hypothetical monopoly test to two-sided platforms, the challenges of implementing the SSNIP test empirically in two-sided markets are likely to be overwhelming in practice.” Trial Tr. 1667:16–23 (Evans).
423. Even assuming Dr. Evans’s method is correct, the opinions he offers in this case do not meet his own standards. Ex. Expert 8 ¶ 84 (Schmalensee). In his own academic work, Dr. Evans has acknowledged that a double-sided SSNIP test should include simultaneous testing of both sides of the market using at least 14 inputs. Ex. Expert 8 ¶ 88 (Schmalensee). He has not followed that methodology here. *Id.* Nor did Dr. Evans take into account indirect network effects in his SSNIP analysis. Trial Tr. 1897:5–1899:8 (Schmalensee).

- 423.1 Additionally, Dr. Evans did not do a separate analysis of Apple’s anti-steering provisions, and offered no opinions with respect to the anti-steering provisions standing alone, nor did he tie his market definition or assessment of monopoly power to those provisions. Trial Tr. 1573:24–1574:4 (Evans). Epic introduced no survey, study, or other consumer evidence to suggest that consumers had been affected by a lack of information owing to the anti steering provisions, *see, e.g.*, Trial Tr. 1825:4–10 (Athey)—provisions which are used by companies like AirBnB and eBay because they are efficient, Trial Tr. 2414:12–23 (Evans). Epic also introduced no evidence showing that consumers lacked information about competitive alternatives, such as multi-platform currencies. Documents confirm that anti-steering provisions are ubiquitous in the industry, and can be found on Google Play, the Amazon Appstore, and the Microsoft Store. DX-3120. More generally, is standard practice for a store not to advertise competitive options within the store itself. Trial Tr. 3864:21–3865:5 (Cook). Further, Dr. Evans conceded that “[n]othing in Apple’s guidelines or contractual agreement(s) stops a developer from acquainting users outside of the app with the developers’ services and the purchase options it offers.” Trial Tr. 2411:20–24 (Evans).
- 423.2 The examination of Dr. Athey, and discussion therein of the Steam and GameClub apps, showed that developers have a wealth of opportunities to advertise and provide consumers with information about features, products, and games. *See supra* § XVI.C. Testimony from Mr. Schiller confirmed this: As he explained, Apple is “just concerned with the situation where a user – a new user downloads an app, sets up a new accounts, wants to pay for it, and the developer says, set up your account, give me your email. And right away there’s an email in the box saying, ‘And here’s how to go pay for it, not in the App Store.’” Trial Tr. 2823:2–15 (Schiller). But Mr. Schiller confirmed that Apple does not have any objection to “developers sending marketing emails or other emails to the players of their apps,” Trial Tr. 2823:16–20 (Schiller), and that there is no rule “against any marketing [developers] want to do to their users and their user base to encourage them to play on all of their platforms,” so long as the marketing is “sent generally to the user base,” Trial Tr. 2825:18–2826:7 (Schiller). Mr. Cook confirmed that developers “can do mass marketing, provided that the customer will let them have their email.” Trial Tr. 3864:9–20, 3996:3–9 (Cook). Mr. Schiller himself, in fact, has received numerous marketing emails from Epic regarding Fortnite and advising him of cross platform play. Trial Tr. 2824:15–2828:18 (Schiller); *see also* DX-5555; DX-5627.
- 423.3 If anything, Epic’s recent focus on the anti-steering provisions (an apparent response to questions from the Court) represents a “fallback” position, in light of the fact that any allegation that the anti-steering provisions are anticompetitive squarely contradicts Epic’s market definition that includes *only* Apple—if Apple has no competitors, then the anti-steering provisions would serve no purpose. *See* Trial Tr. 2407:6–2408:5 (Evans). Epic’s case is thus internally inconsistent, and it thus clearly has not established any anticompetitive effects from the anti-steering provisions.

424. First, Dr. Evans conducts his foremarket and aftermarket SSNIP tests on the consumer side and on the developer side separately. Ex. Expert 1 ¶¶ 133, 139, 141, 262 (Evans). Then, he effectively dismisses indirect network effects by claiming that SSNIP on both developers and consumers would be profitable, because neither side would respond to the one-sided price increases he tested. Ex. Expert 1 ¶¶ 68, 133, 138, 141 (Evans). As Professor Schmalensee explained, this is implausible—a price increase would reduce consumer demand for apps, which in turn would make app sales less profitable for developers, and developers may in turn react by reallocating engineering or marketing resources even if they do not leave the platform entirely. Trial Tr. 1898:10–14 (Schmalensee). Notably, Dr. Evans does not perform *any* actual SSNIP calculations testing both sides of the market simultaneously, as required by his own research. Ex. Expert 1 ¶ 139 (Evans).
425. Moreover, *none* of Dr. Evans’s tests use the minimum 14 inputs required by his own methodology. Ex. Expert 8 ¶ 88 (Schmalensee). His foremarket SSNIP test uses only two inputs on the customer side, and just one on the developer side. Ex. Expert 8 tbl. 1 (Schmalensee).
426. Dr. Evans’s single-sided SSNIP tests—that is, those that purport to measure the effect of price changes on only one side of the platform—are also flawed. Trial Tr. 2021:9–17 (Lafontaine); Ex. Expert 7 ¶ 56 (Lafontaine).
427. First, Dr. Evans claims that a hypothetical monopolist of smartphone operating systems could raise prices by a SSNIP to consumers, holding the developer price and app supply constant. Ex. Expert 7 ¶ 61 (Lafontaine). This test suffers from several critical conceptual and methodological flaws and should be disregarded. *Id.*
428. As Dr. Evans acknowledges, consumers do not buy smartphone operating systems separately from smartphones. Ex. Expert 7 ¶¶ 61–63 (Lafontaine). There is no price charged to consumers for iOS or the Android operating system. Trial Tr. 2022:12–2023:4 (Lafontaine); Ex. Expert 1 ¶ 139 (Evans); Ex. Expert 7 ¶ 63 (Lafontaine). Nevertheless, Dr. Evans proceeds to “test” the consumer side of his alleged market, which he claims is a two-sided transaction platform. Ex. Expert 7 ¶ 61 (Lafontaine). Thus, despite his purported focus on *iOS consumers*, he bases his SSNIP on the prices *Microsoft* charged to *manufacturers* for smartphone and PC operating systems in 2012 and 2009. Trial Tr. 2022:15–18 (Lafontaine); Ex. Expert 1 ¶¶ 67–68 (Evans). Even though he purports to evaluate the profitability of a SSNIP to smartphone *operating systems*, Dr. Evans then considers whether the SSNIP would result in substantial consumer substitution to other *devices*. Trial Tr. 1505:9–17 (Evans); Ex. Expert 1 ¶¶ 74, 77, 83, 88 (Evans). And Dr. Evans conceded that he “had no data [he] relied on that showed actual substitution arising from relative price changes between platforms.” Trial Tr. 1644:15–1646:4 (Evans).
429. Had Dr. Evans not artificially separated smartphone operating systems from the purchase that consumers actually make in his purported foremarket—the smartphone—the SSNIP would be based on substantially higher prices. Trial Tr. 2022:23–2023:4 (Lafontaine); Ex. Expert 7 ¶ 66 (Lafontaine).

430. In his second “test,” Dr. Evans claims that a hypothetical monopolist of smartphone operating systems could profitably raise prices by a SSNIP to developers, holding consumer prices and usage constant. Ex. Expert 1 ¶ 68 (Evans). He claims that smartphone operating systems charge developers for access to the development tools necessary for writing compatible apps, a fee that he characterizes as “nominal.” Ex. Expert 1 ¶¶ 10, 26, 96 (Evans); *see also* Trial Tr. 686:15–18 (Grant) (stating no platform charges more than a “nominal” fee).
431. This test suffers from several critical conceptual and methodological flaws and should be disregarded. Ex. Expert 7 ¶ 68 (Lafontaine). To begin with, there is no market for smartphone operating systems independent from iOS app distribution. Ex. Expert 7 ¶ 64 (Lafontaine). Operating systems only have value to developers insofar as they enable them to transact with consumers. Ex. Expert 7 ¶ 68 (Lafontaine). As a result, the salient price to developers is the distribution commission—not the annual developer fee. Ex. Expert 7 ¶ 69 (Lafontaine). Thus, the SSNIP should have been based on the commission. *Id.*
432. In his third test, Dr. Evans claims that, holding the supply of apps constant, a hypothetical monopolist of “iOS app distribution” could profitably impose a SSNIP on consumers (by increasing its commission to developers, who he assumes would then pass on 50 percent of the increase to consumers). Ex. Expert 1 ¶ 136 (Evans). He predicts that Apple could have increased its profits by \$887.4 million for FY 2019 by increasing the commission rate by 31%, which under his assumptions corresponds to a 5% price increase for consumers. Ex. Expert 1 ¶ 141 (Evans). Dr. Evans explains that the increased profits would swamp any lost profits from reduced app spending on switches to Android and, moreover, that developers would not reduce app supply. *Id.* As a result, according to Dr. Evans, his conclusion that Apple can profitably raise commissions would hold even after accounting for developers’ reactions and for indirect network effects. *Id.*
433. This “test” suffers from several critical conceptual and methodological flaws and should be disregarded. Ex. Expert 7 ¶ 72 (Lafontaine). First, Dr. Evans’s model concludes that Apple has left nearly a billion dollars on the table in 2019 alone—a conclusion that conflicts with a key assumption underlying economic theory that firms maximize profits. Trial Tr. 1669:11–16 (Evans); Ex. Expert 7 ¶ 72 (Lafontaine). More likely is that Dr. Evans’s calculation and conclusion are simply incorrect—and that Apple in fact is constrained by existing competition and potential entry in transactions so it cannot profitably raise its commission rate. Ex. Expert 7 ¶ 72 (Lafontaine). This error is a consequence of applying a SSNIP test to a single-brand market. SSNIP tests on a single-brand market are economically meaningless because a single-brand market assumes that the monopolist already exists. Trial Tr. 2019:24–2020:17 (Lafontaine). This error also is a likely result of Dr. Evans’ neglect for indirect network effects. Trial Tr. 1899:5–8 (Schmalensee).
434. Next, Dr. Evans focuses entirely on in-app purchases rather than initial downloads—the relevant transaction that he should be testing for in an alleged market for app distribution. Ex. Expert 7 ¶ 75 (Lafontaine). Indeed, Dr. Evans opines that in-app purchases are not even in the relevant app distribution market. Trial Tr. 1503:11–16 (Evans); Ex. Expert 1 ¶¶ 119–21 (Evans).

435. Finally, the test is not based on reliable substitution data, but flawed survey data from Professor Rossi. Trial Tr. 1897:20–23 (Schmalensee) (Dr. Evans relies on Professor Rossi’s survey, which is “far from perfect”); Ex. Expert 7 ¶ 74 (Lafontaine). Professor Rossi’s survey and the resulting data suffer from several critical flaws. Ex. Expert 7 ¶ 74 (Lafontaine).

435.1 First, the survey focuses entirely on the price of in-app purchases—which, as noted above, are *not* even within the alleged relevant market advanced by Dr. Evans—while ignoring other transactions, like initial downloads and updates, that are in the alleged relevant market advanced by Dr. Evans. Trial Tr. 2549:13–2550:1 (Rossi); Trial Tr. 1646:16–1647:5 (Evans); Ex. Expert 7 ¶ 75 (Lafontaine). As a result, Dr. Evans’s analysis is unreliable and provides no insight into substitution in any alleged iOS app distribution market. Ex. Expert 7 ¶ 75 (Lafontaine).

435.2 Second, Professor Rossi framed his questions in ways that likely biased respondents towards responses that would indicate that they were less likely to substitute or make changes, which in turn, may have biased the SSNIP analysis, such as failing to ask respondents to assume that the price changes would be permanent (i.e., nontransitory), which Dr. Evans confirmed is “important” to the reliability of the survey. Trial Tr. 2531:18–2532:4 (Rossi); Trial Tr. 1649:9–16, 1650:4–12 (Evans); Ex. Expert 7 ¶ 77 (Lafontaine); *see also* Trial Tr. 3545:16–23 (Hanssens) (discussing potential “acquiescence bias” in framing of the questions).

435.2.1 The progression of draft surveys confirms that Professor Rossi sought to elicit responses to a 30-day price change, not a permanent one. According to Professor Rossi, the first (unused) version was “designed to elicit respondents’ reactions to a price increase with respect to the at-issue purchases,” and asked respondents to focus “on their estimated total spending within the past 30 days” and “to consider a similar 30-day period in the future in thinking about potential changes in behavior, and . . . whether they would make fewer purchases in response to the price increase.” PX-1920.3. This question referred to *future* purchases by the respondents. Trial Tr. 2526:5–9 (Rossi).

435.2.2 But the third (and final) version of this same question did not contain that language. Trial Tr. 2532:19–21 (Rossi). Professor Rossi stated “[t]he context for the scenario was changed from a future timeframe to the most recent 30-day period,” and “Respondents were asked if in the past 30 days they would have made the same purchases in Apple App Store with the price change.” PX-1920.12; Trial Tr. 2528:12–2529:2 (Rossi). Professor Rossi continued: “The future scenario context in V1 and V2 was vague. Considering a period in the future also made it difficult for respondents who had ‘lumpy’ purchases (such as an annual subscription charge in the past 30 days), to contemplate the impact of a future price increase on their purchases. With the recall-based approach, it was now feasible to reframe the price increase scenario to focus on the most recent 30-day period.” PX-1920.14. This question

was therefore a “backward-looking question rather than a forward-looking question,” and therefore conflated “[t]he notion of price reaction and the notion of satisfaction with the existing product.” Trial Tr. 3541:23–3543:5 (Hanssens); *see also* Trial Tr. 3543:6–16 (Hanssens) (explaining how Professor Rossi’s conflation of price reaction and satisfaction could artificially increase the percent of “stickers”). For that reason, Professor Rossi’s results are unreliable. Trial Tr. 3547:10–15 (Hanssens).

435.2.3 Professor Rossi’s failure to test the anticipated effect of a *permanent* price increase undercuts Dr. Evans’ entire SSNIP analysis. Dr. Evans stated his understanding that Professor Rossi’s survey “indicated that [the hypothetical price increase] was a permanent price increase, and that “the questions are phrased in a way that it refers to a – a permanent – permanent price increase.” Trial Tr. 1647:17–20, 1648:8–14 (Evans). But as shown above, Professor Rossi’s survey did not “indicate[]” that the price increase was “a permanent price increase,” and instead told survey respondents to look *backward* at their past survey. Dr. Evans testified that the “topic of permanence was important” to him, because the hypothetical monopolist test requires a “non-transitory price increase.” Trial Tr. 1649:9–12 (Evans). Dr. Evans concurred that “it’s generally agreed among economists that consumers’ response to longer run price changes can be substantially different from their responses to shorter run price changes,” and that the elasticity measured by the survey would have been artificially depressed had Professor Rossi failed to indicate to survey respondents that the price change was permanent. Trial Tr. 1652:23–1653:02 (Evans).

435.2.4 The price increases discussed in the survey—when confined to just 30 days—also were far from significant, ranging from less than \$0.25 to \$1.50. Trial Tr. 2539:13–2540:297%, 2543:20–2544:25 (Rossi). And the significance of the price increases were dampened even further by the survey’s discussion of switching costs. Trial Tr. 2543:12–17 (Rossi).

435.3 Third, the survey was limited to the United States, not the global market that Dr. Evans posits. Trial Tr. 1653:3–16 (Evans).

435.4 Fourth, Professor Rossi conducted his survey on January 20, 2021, which means that the 30-day period that was the subject of his study was December 21, 2020 through January 20, 2021. Trial Tr. 2536:22–2537:15, 2509:1–15 (Rossi). Professor Rossi conceded that he has not done any research regarding the question of whether consumers believe that prices increase in January after the December holidays, and further conceded that “for some products they may.” Trial Tr. 2512:15–2513:13 (Rossi). And indeed, Epic’s own products are subject to seasonal price pressures according to Epic’s Mr. Weissinger, Trial Tr. 1332:10-15 (Weissinger). Thus his survey is not reliably generalizable. *See* Trial Tr. 3530:16–

25 (Hanssens) (Professor Hanssens explaining that he used a 12-month sample to “filter out possible seasonal effects in usage” in his study).

- 435.5 Fifth, Professor Rossi did not follow standard survey methodology because he failed to conduct interviews of respondents regarding their understanding of the final survey instrument that he used. Such in-depth interviews are necessary to eliminate ambiguities and misunderstandings and to ensure that survey respondents understand the questions being asked and answer them accurately. Trial Tr. 2523:8–21 (Rossi). Professor Rossi interviewed respondents regarding the initial draft of his survey, and determined that there were aspects of that draft that respondents found confusing and unclear, and he created three additional drafts of his survey after the initial draft. Trial Tr. 2525:23–2526:5 (Rossi). Rather than conducting interviews of respondents for these subsequent drafts, however, Professor Rossi conducted what he called “structured pretests”—a term that is not generally used in the survey industry, and which Professor Rossi had never used before in any survey work he had done prior to this case. Trial Tr. 2526:6–13, 2527:5–7 (Rossi); *see also* Trial Tr. 3539:10–13 (Hanssens) (explaining that the terminology of “structured and “unstructured pretests” is not standard). No interviews were conducted in these “structured pretests.” Trial Tr. 2527:9–16, 2529:20–23 (Rossi); *see also* Trial Tr. 3540:9–12 (Professor Hanssens agreeing that “Professor Rossi’s failure to pretest his final survey instrument may have had an impact on the reliability of his results”).
- 435.6 Finally, Professor Rossi did not consider Epic’s core demographic (males who are 13–25 years old) in his survey, which did not include respondents under age 17 and included respondents over age 25. Trial Tr. 2534:24–2536:19 (Rossi).
436. In his fourth test, Dr. Evans claims that a hypothetical monopolist of iOS app distribution could profitably impose a SSNIP on developers. Ex. Expert ¶ 143 (Evans). This “test” suffers from several critical conceptual and methodological flaws and should be disregarded. Ex. Expert 7 ¶ 80 (Lafontaine). Just like the test on the consumer side, this test focuses entirely on in-app purchases instead of initial downloads, and reaches the absurd conclusion that Apple is an actual monopolist, but has failed to choose the profit-maximizing price. Ex. Expert 7 ¶ 81 (Lafontaine). In addition, the test fails to consider any potential developer response to a commission increase except exiting iOS altogether. Ex. Expert 7 ¶ 82 (Lafontaine). This approach completely ignores other likely responses, such as passing the commissions through to consumers, steering consumers to websites and other platforms, changing the monetization strategy to become more ad-supported or subscription-based, or moving to a web app. Trial Tr. 2021:20–2022:9 (Lafontaine); Ex. Expert 7 ¶ 82 (Lafontaine).
- 436.1 Separate from Dr. Evans’ test, Dr. Cragg attempted to perform his own hypothetical monopolist test to show that game transactions are not in a discrete market. Trial Tr. 2306:6–2307:1 (Cragg). Yet in doing so, he did not actually assume a hypothetical monopolist of the game transactions market, but instead assumed *two* competing app stores—one offering only game transactions and the other game transactions *and* non-game transactions—and concluded that game transactions

could not be a relevant market because the store specializing in game transactions could not profitably increase prices without customers departing for the other app store. *Id.* Of course, this mode of analysis defeats the whole point of the hypothetical monopolist, because Dr. Cragg’s analysis does not actually involve a monopolist of the relevant market, but instead *assumes* competition in the relevant market. By Dr. Cragg’s analysis, all markets are too narrow, because there is always the possibility that a competitor to a “monopolist” will sell both the product in question *and* some other product. *See, e.g.*, Trial Tr. 2307:2–5 (Cragg) (counsel asking whether retail gas could be a relevant market).

XVII. The Relevant Geographic Market Is Domestic

437. When defining a geographic market in a case involving two-sided transaction platforms, the perspectives of both sides of the platform—here, game developers and consumers who play games—are relevant as a matter of economics. *See* Ex. Expert 7 ¶¶ 20, 90 (Lafontaine).
- A. From the perspective of U.S. consumers, the relevant geographic market is the United States**
438. Like many game transaction platforms, the App Store operates country-specific storefronts, and consumers transact through a storefront based on their home country. Trial Tr. 2754:14–2755:15 (Schiller); Ex. Expert 7 ¶ 91 (Lafontaine). Aspects of the storefront, such as the “Today” tab, are unique to each country. Trial Tr. 961:19–962:20 (Fischer).
439. Accordingly, U.S. consumers generally have access only to the App Store’s U.S. storefront; they do not have access to the App Store’s foreign storefronts. Trial Tr. 2066:24–2067:6 (Lafontaine); Trial Tr. 2754:20–2755:15 (Schiller). Consoles and other game transaction platforms similarly organize their stores by country, with available content differing by country and payment restrictions in place that prevent shopping in a different country’s store. Ex. Expert 7 ¶ 91 (Lafontaine); *see also* Trial Tr. 1565:12–14 (Evans) (“[A] lot of developers are selling internationally and people use different payment methods in different geographies.”).
440. Consumers have limited capabilities to switch to a storefront other than the storefront of their home country. Trial Tr. 2066:24–2067:6 (Lafontaine); Ex. Expert 7 ¶ 91 (Lafontaine).
441. For the App Store, consumers may change country or region through the software on their phones, but the process involves a number of steps and conditions that most consumers would find too inconvenient unless strictly necessary (*e.g.*, if actually moving countries). Ex. Expert 7 ¶ 91 (Lafontaine).
442. There are other impediments to switching geographic registration. Doing so often requires a user to violate the terms of service or provide incorrect registration information. Ex. Expert 7 ¶ 91 (Lafontaine). Users sometimes must register an account without a credit card; Nintendo, for example, has region-specific eShops that only accept credit cards issued from the same region. Ex. Expert 7 ¶ 91 (Lafontaine); DX-4931.001. And without a credit

card on file these consumers would also be unable to download any paid apps or engage in in-app purchases. Ex. Expert 7 ¶ 91 (Lafontaine).

443. In addition game apps downloaded from a foreign storefront may not work if the user is not in fact a resident of that country. For example, Microsoft notes that “If you change your country or region in Microsoft Store, *the stuff you got in one region might not work in another*. This includes: Xbox Live Gold, Xbox Game Pass, Apps, games, music purchases, and movie and TV purchases and rentals.” DX-4920.001.
444. The typical consumer, therefore, is generally restricted to purchases from platforms that operate in their own country. Ex. Expert 7 ¶ 91 (Lafontaine).

B. From the perspective of developers, the U.S. is a separate market for game app transactions

445. Geographic constraints on U.S. game developers are less pronounced as they can transact with foreign consumers by publishing on foreign platforms. See Ex. Expert 7 ¶ 91 (Lafontaine). Foreign game app developers also can transact with U.S. consumers by publishing their games on U.S. platforms, including the App Store’s U.S. storefront. *Id.*
446. No matter their country of origin, developers compete for U.S. consumers on platforms’ U.S. storefronts because country-specific storefronts for each platform represent different product offerings that do not compete with each other. See Ex. Expert 7 ¶ 9 (Lafontaine).

C. Competitive conditions differ significantly across countries

447. The competitive conditions each platform faces varies from country to country. Ex. Expert 7 ¶¶ 90–91 (Lafontaine).
448. The set of apps available across the world is not uniform. Ex. Expert 7 ¶¶ 90–91 (Lafontaine). So one accessing the App Store’s U.S. storefront would not have an identical selection of game apps to a consumer accessing a foreign storefront. *Id.*
449. Moreover, different countries feature different slates of competing platforms, with differing relative market shares. Ex. Expert 7 ¶ 93 (Lafontaine).
450. All of the above factors affect demand and substitution, creating different market conditions in each country. Ex. Expert 7 ¶¶ 90–91 (Lafontaine).
451. [OMITTED]

XVIII. Apple Lacks Monopoly Or Market Power In A Properly Defined Game App Transaction Market

452. There is no dispute that Apple did not possess market or monopoly power in any relevant market related to app distribution in 2007, when it released the iPhone and iOS, in 2008, when it created the App Store and established a 30% commission, or in 2009 when it introduced the in-app purchase business model for developers. Trial Tr. 1624:8–11;

1670:18–1671:14; 1673:18–1674:22; 1685:11–22 (Evans); Ex. Expert 1 ¶¶ 94, 96–98 (Evans). Dr. Evans agreed that the App Store achieved critical mass, defined as the point where rapid growth on a platform kicks in, between 2009 and 2010, before he believed Apple obtained monopoly power. Trial Tr. 1685:5–1686:8 (Evans).

453. Epic contends that Apple obtained monopoly power in 2010. Trial Tr. 1674:23–1675:24 (Evans) (“In your opinion, Apple did not possess monopoly or substantial market power in your two-sided iOS app distribution market, again, until around 2010. That’s your current view, right? A. That’s correct. . . . Q. So you’re taking back your testimony yesterday about 2011, 2012? A. If you will, yes.”), Trial Tr. 1500:2–1501:9 (Evans). From the thousands of developers with apps in the App Store, Epic presented evidence from three developers: a representative from Down Dog (Yoga Buddhi) who objected to the Apple commission and was generally unhappy with App Review, and representatives from Nvidia and Microsoft who complained that their preferred form of streaming games was not approved for iOS. This testimony was inadequate to show decreased output, higher prices, or reduced quality and innovation across the App Store. As discussed below, the available evidence is inconsistent with Epic’s assertion that Apple has possessed or currently possesses monopoly power in a properly defined market.

453.1 Emblematic of the developers called by Epic, Ms. Lori Wright admitted her employer, Microsoft, has an enormous financial incentive to keep Epic happy and testified that she withheld documents despite the Court’s Order advising Microsoft that “the failure to produce relevant documents relevant to the individual testifying witness . . . will be factored into the individual witness’s credibility and, if necessary, may warrant the striking of testimony” (Dkt. 437 at 4). Trial Tr. 592:2–593:12, 600:13–601:22 (Wright). Even when confronted with the Court’s Order, Ms. Wright refused to say she would have produced relevant materials to Apple because she had not “thought enough about it.” Trial Tr. 600:13–601:22 (Wright).

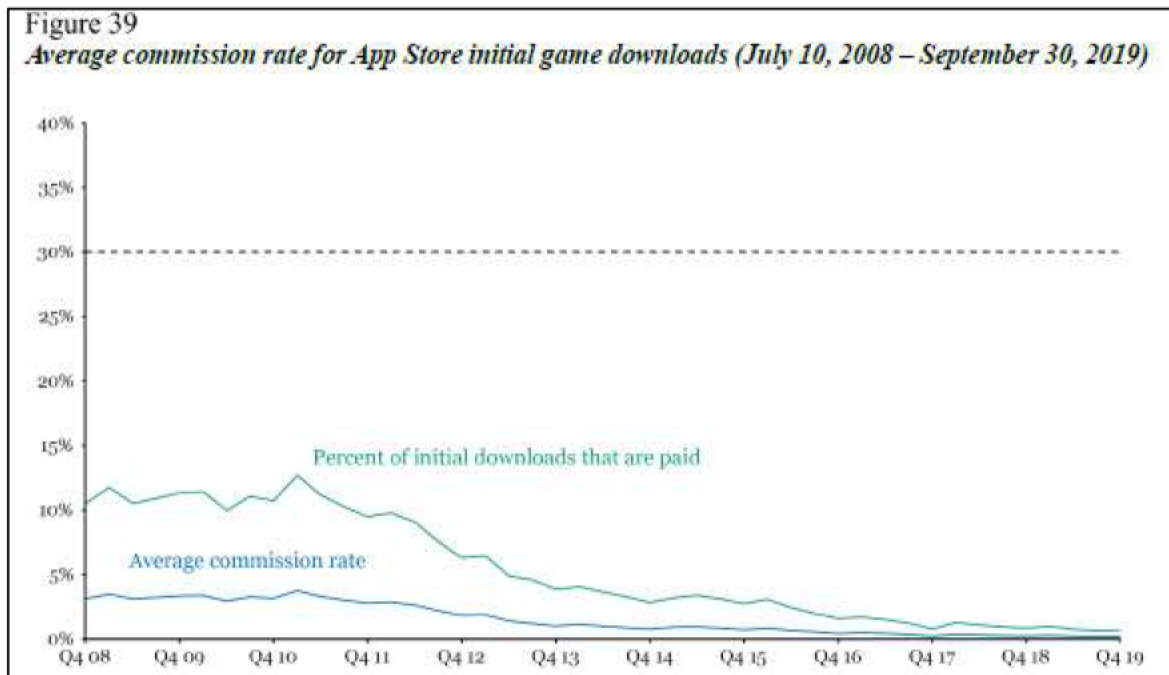
453.2 Epic complains that while Apple permits subscription gaming services on iOS, Apple requires that users individually download each game from such services; but Apple imposes that same requirement on its own subscription gaming service, Apple Arcade. Trial Tr. 1853:25–1854:16 (Athey). And the only thing this restriction does is require a user to perform an additional click to download a game. Trial Tr. 1854:14–19 (Athey).

A. Apple’s effective and actual commission rate on in-app purchases has decreased, not increased, since the App Store was launched

454. Apple has never increased its baseline 30% commission. Trial Tr. 2740:14–15 (Schiller). To the contrary, it has lowered the commission in multiple instances, including subscription services and as part of its small business program. *See supra* § VII.C; Trial Tr. 2088:1–14 (Hitt); Ex. Expert 6 ¶¶ 159, 269 (Hitt).
455. Apple’s effective commission rate has always been lower than the actual rate because the App Store offers free-to-download apps on which Apple collects no commission. Trial Tr. 2115:21–2116:12 (Hitt) (“ . . . when you consider free transactions, the effective

commission rate is lower. And I think that's important to consider."); Ex. Expert 6 ¶¶ 9, 269 & fig. 55 (Hitt). When those free downloads are considered—as they should be—the effective commission rate for initial game app downloads in 2008 was about 3%. Ex. Expert 6 fig. 39 (Hitt).

456. Since 2008, Apple's actual commission rate has stayed constant or decreased, while the effective commission rate for initial game downloads has fallen from about 3% to virtually zero today:



Trial Tr. 2109:2–2110:8 (Hitt); Ex. Expert 6 fig. 39 (Hitt). This price decrease does not include the recently launched Small Business Developer Program. Trial Tr. 2235:24–2236:6 (Hitt).

457. This decrease is in part attributable to the fact that developers are increasingly taking advantage of monetization strategies that involve payment of no commission to Apple. Trial Tr. 2113:2–11 (Hitt) (“... commission rates are - - are steady or declining and the decline is due to changes in app policies regarding certain kinds of transactions.”); 2113:16–25 (Hitt) (“... increasingly developers are finding ways to monetize with subscriptions rather than other sources, and that would make them subject to lower commissions upon subscription renewal.”); Ex. Expert 6 ¶ 169 (Hitt); Ex. Expert 7 ¶ 269 (Lafontaine); DX-5469. Over time, developers have shifted from paid-game downloads to free-to-download games with in-app purchases. Trial Tr. 2095:4–22 (Hitt); Ex. Expert 6 ¶ 169 & fig. 38 (Hitt). At the same time, an increasing majority of games are free to download and offer no in-app purchases—up to 66% in the 2019 fiscal year. Trial Tr. 2115:9–19 (Hitt); Ex. Expert 6 ¶ 169 & fig. 38 (Hitt).
458. As a result, in real dollars, the average commission on initial downloads is now less than two cents per download. Ex. Expert 7 ¶ 108 (Lafontaine). Because this calculation does

not include app updates, all of which are free, the average commission across initial downloads and updates is substantially lower than two cents—virtually zero. *Id.*

459. Moreover, the increase in the breadth of features available to developers has resulted in an even greater decrease in quality-adjusted prices. Trial Tr. 2119:1–11 (Hitt); Ex. Expert 7 ¶¶ 94–98, 100, 116 (Lafontaine). Apple has constantly innovated and improved iOS device technology, such as improvements in processing speed and graphic sensors, meaning that games transacted in the App Store have increased in quality. Trial Tr. 2117:19–2118:21 (Hitt); Ex. Expert 6 ¶ 192; DX-5335. Improvements in the iOS mobile device gaming experience have made it possible for games, like *Fortnite*, to be played on iOS mobile devices that previously “could not have been delivered on an iOS platform with previous technology.” Trial Tr. 2117:19–2118:21 (Hitt); Ex. Expert 6 ¶ 194. Thus, developers are getting even more value for their money. *See* Trial Tr. 2112:16–2113:1 (Hitt) (“Apple’s prices have essentially been constant for in-game transactions, and developers are making greater use of this service . . . suggest[s] that game developers and consumers have been getting more value from these transactions.”).

B. Dr. Evans’s and Dr. Cragg’s effective commission calculations ignore the vast number of free transactions, which, when included, yield an effective commission for game app transactions of 8.1% in 2018-2019

460. Because the App Store is a two-sided transaction platform, a proper market power analysis must account for costs to developers as well as consumers. Trial Tr. 2126:20–2128:3 (Hitt); Ex. Expert 6 ¶ 22 (Hitt); Ex. Expert 8 ¶¶ 108, 123 (Schmalensee). Any analysis of Apple’s effective commission must account for the impact of free downloads that do not incur a commission—something Dr. Evans fails to do. Trial Tr. 2114:15–25, 2115:9–19 (Hitt) (“ . . . free apps are an important part of what the App Store provides . . . so to exclude that I think misses a significant component of the services that are provided by the App Store and makes the commission rates seem higher than they really are.”); Ex. Expert 6 ¶ 180 (Hitt). In addition, developers have the option of a subscription model, which results in a 15% commission after the first year. Trial Tr. 2114:6–14 (Hitt).
461. Free downloads have always been a large proportion of App Store game transactions, and they are only increasing in popularity. Trial Tr. 2095:4–22 (Hitt); Ex. Expert 6 ¶ 169 & fig. 38 (Hitt). Paid-to-download apps comprised nearly 80% of App Store downloads in 2008 but comprise less than 10% today. Trial Tr. 2095:4–22 (Hitt); Ex. Expert 6 fig. 38 (Hitt). Meanwhile, free-to-download apps (both those that offer in-app purchases and those that do not) have grown from approximately 20% of all downloads in 2008 to over 90% today. Trial Tr. 2095:4–22 (Hitt); Ex. Expert 6 fig. 38 (Hitt). Thus, failure to account for free downloads in the average commission rate would ignore more than 90% of all downloads.
462. Dr. Evans’s assumption that the average commission rate is 27.7% fails to consider the impact of free transactions. Dr. Evans calculates the App Store’s effective commission rate by dividing net revenues recognized by the App Store by the level of gross billings to users. Ex. Expert 1 ¶ 157 & tbl. 4 (Evans). His calculation, therefore, considers paid transactions only and ignores all free transactions. Trial Tr. 2114:15–25; 2115:9–19 (Hitt);

Ex. Expert 6 ¶ 179 (Hitt); Ex. Expert 8 ¶ 168 (Schmalensee). Because he fails to consider free transactions, Dr. Evans's calculation of 27.7% is the effective commission rate of *paid* App Store transactions, Ex. Expert 6 ¶ 179 (Hitt); Ex. Expert 8 ¶ 168 (Schmalensee), not the effective commission rate of *all* App Store transactions, Trial Tr. 2114:15–25; 2115:9–19 (Hitt).

463. Dr. Cragg's computation that the average effective commission rate is nearly 33% also fails to consider the impact of free transactions and the number of free transactions, Trial Tr. 2282:20–2283:9 (Cragg), even though Dr. Evans testified that “free download transactions” are in his proposed market, Trial Tr. 1616:5–7 (Evans).
464. Moreover, Dr. Cragg inflated his effective commission rate by rigging the inputs into his calculations. In the numerator of his calculation, Dr. Cragg attributed to Apple as part of its “total share of developer revenues” the revenue Apple earned from selling sponsored ads. Ex. Expert 13 ¶ 107 (Cragg). That is so even though he did not determine what proportion of that revenue came from apps that involve transactions on which Apple collects a commission. *Id.* Nor did Dr. Cragg even analyze whether purchases of sponsored ads were transactions within the relevant market. *Id.* Moreover, Dr. Cragg fails to account for the fact that sponsored ads are optional: Developers can distribute their apps through the App Store without purchasing any ads. Trial Tr. 2816:17–18 (Schiller).
465. [OMITTED]
- 465.1 The reliability of Dr. Cragg's analysis is further called into question by the fact that he misrepresented on his CV and on his public website that he had been “qualified in federal court as an expert in antitrust,” when in fact he testified before an administrative law judge in a matter involving importation of opium, and that he misrepresented in the same places that he assisted the Department of Justice on antitrust matters. Trial Tr. 2290:15–2291:23 (Cragg).
466. In fact, the average commission rate in 2019 for all app transactions was only 4.7% for all app transactions and 8.1% for game app transactions. Trial Tr. 2115:24–2116:12 (Hitt).

C. Over the same time, output has dramatically increased

467. In a two-sided market like the game transaction market, multiple measures of output could be used to calculate market shares. Trial Tr. 2080:1–9 (Hitt); Ex. Expert 6 ¶ 137 (Hitt). Since the launch of the App Store—and since Apple's alleged acquisition of monopoly power in 2010—output has increased in many ways (*see supra* § IX; Trial Tr. 1680:5–14 (Evans) (Dr. Evans describing the growth of output from the App Store as “explosive[]”); Trial Tr. 2326:22–24 (Cragg). Dr. Evans agreed that this growth exceeds the 30% growth that the Supreme Court in *American Express* characterized as dramatic. Trial Tr. 1680:24–1681:4 (Evans). And he also agreed that output did not contract or slow after 2010, when Apple supposedly obtained market power, Trial Tr. 1680:25–1681:2 (Evans), nor did he even study whether there was any meaningful change in output in 2010, Trial Tr. 1682:6–15 (Evans).

- 467.1 The number of app developers has dramatically increased, and today there are over 30 million registered iOS developers. Trial Tr. 2759:9–13 (Schiller); *see also supra* § IX.A.
- 467.2 Similar growth has occurred with the App Store’s user base—it had over 500 million cumulative users by 2014, DX-3734.022, 650 million by 2015, DX-4526.027, and over 1 billion cumulative users today, Trial Tr. 2846:6–8 (Schiller).
- 467.3 The number of game apps available on the App Store has dramatically increased. *See* § IX.B. When the App Store’s U.S. storefront launched, it offered 452 third-party apps (131 of which were games). Trial Tr. 2085:12–23 (Hitt); Ex. Expert 6 ¶ 182 (Hitt). The App Store offered over 1 million apps by 2014, DX-3734.024, and 1.8 million apps by 2020, Ex. Expert 12 ¶ 21 (Malackowski).
- 467.4 The total number of digital game transactions on the App Store, and the developer revenue earned on the App Store, have dramatically increased over time. *See* § IX.C. Developer revenue from digital game transactions has grown at a compound rate of 24% annually, resulting in a 2,600% increase in revenues earned by developers from paid game downloads and in-app purchases between 2010 and 2018. Trial Tr. 2081:10–2082:5 (Hitt); Ex. Expert 6 ¶ 183 & fig.44 (Hitt). The App Store’s 2,600% increase in total output of digital game transactions is much greater than the digital game transaction market overall, which was around 448% during the same 2010–2018 time period. Trial Tr. 2082:23–2083:18 (Hitt); Ex. Expert 6 ¶ 185 (Hitt).
- 467.5 Dr. Evans conceded that he did not do any analysis to see whether, after *Fortnite* was removed from the App Store, consumers switched to other iOS games. Trial Tr. 1530:3–1531:18 (Evans). As he stated, it is “possible” that consumers would have substituted to other iOS games, meaning that there would have been no decline in output. Trial Tr. 1531:8–11 (Evans).
- 467.6 Sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. Ex. Expert 6 ¶ 187 & fig. 47 (Hitt).
- 467.7 The quality of game apps available on the App Store has increased, *see* § IX.D, allowing iOS devices to run high-end “AAA” games, Trial Tr. 633:5–15 (Wright); Trial Tr. 2117:19–2118:21 (Hitt), games from leaders in the entertainment industry, DX-4608.008, .011, and games that were previously available only on consoles and PCs, Trial Tr. 2117:19–2118:21 (Hitt).
468. This *increase* in output is important because a firm can be said to have market power if it can profitably *restrict* output. Trial Tr. 2079:17–22 (Hitt); Ex. Expert 6 ¶ 130 (Hitt). The increase in total output of digital game transactions over time shows that App Store competitors do not lack the ability to expand output, Trial Tr. 2244:3–17 (Hitt), and that Apple is still constrained by many factors that prevent it from exercising market power, Ex. Expert 6 ¶¶ 10, 134 (Hitt). Dr. Evans provided no empirical analysis of App Store output, despite having a database of more than 60 billion App Store transactions at his

disposal. Trial Tr. 1645:21–25 (Evans); Trial Tr. 1903:9–10 (Schmalensee); Trial Tr. 2078:14–19 (Hitt).

D. Apple’s commission is consistent with that charged by other game app transaction platforms

469. In the 1990s, most app developers paid 70% or more in commission. Schmalensee TT; Trial Tr. 173:8–12 (Sweeney). When Epic agreed to distribute other developers’ games in the 1990s, it collected a 60% commission—which Mr. Sweeney said was a “good deal” for developers. Trial Tr. 172:6–20 (Sweeney).
470. Steam, launched in 2003, was the first online platform focused on game distribution to gain major success. Trial Tr. 173:13–74:25 (Sweeney). Steam “established” the 30% commission as a model that the gaming industry now uses in most places. Trial Tr. 1248:12–22 (Allison).
471. The App Store launched in 2008 and, like Steam, charged a 30% commission. Trial Tr. 2726:2–9, 2740:8–15 (Schiller).
472. Many of the App Store’s competitors—including platforms from Microsoft, Sony, Nintendo, Steam, and Google—charge 30% or more in commissions to distribute games. Trial Tr. 142:24–43:1 (Sweeney); Trial Tr. 198:10–21 (Sweeney); Trial Tr. 551:14, 554:10–12 (Wright) (noting that Xbox’s “published commission is 30 percent” and Microsoft has no plans to change the commission); Trial Tr. 2089:10–22 (Hitt); Ex. Expert 6 fig. 37 (Hitt). As Mr. Sweeney said, 30 percent is [the most] prevalent rate charged by the stores.” Trial Tr. 161:13–15, 191:9–10 (Sweeney); Trial Tr. 1283:7–24 (Allison); DX-4002.008; DX 3955.003 (Epic describing the 70/30 split as “industry standard” in August 2019); DX-3120.006–.007; *see also supra* § XI.A (describing the 30% commission rates charged by other platforms with which Epic transacts).
- 472.1 Indeed, the Mac App Store has a 30% commission, and Epic does not contend that this rate is supracompetitive. Trial Tr. 1686:6–12 (Evans).
473. Despite having at most an equivalent commission to its main competitors, the App Store provides significantly more services to both developers and consumers. *See supra* § VIII. In fact, when Microsoft was working to get its Xbox Cloud Gaming service working on iOS, the commission was only a “tertiary issue,” and was “not the problem” on the minds of Microsoft employees. Trial Tr. 613:19–14:5 (Wright).
474. In addition, Apple has often reduced its commission. *See supra* §§ VII.C & XVIII.A. When it has done so, other platforms—such as Google Play—have reduced commission levels. Ex. Expert 6 ¶ 176 (Hitt). For example, in 2016, Apple reduced its commission rate to 15% for all subscription renewals after the first year. Trial Tr. 2804:21–11 (Schiller); Trial Tr. 399:16–21 (Simon); Trial Tr. 2088:3–4 (Hitt). In January 2018, Google Play did the same. Ex. Expert 6 ¶ 176 (Hitt). And there have been other instances in which other market participants have cut prices: As one example, Valve lowered commission rates in November 2018 to 25% for developers with Steam revenues between

\$10M and \$50M annually and 20% for developers with Steam revenue exceeding \$50M. Trial Tr. 1209:13–1210:1 (Allison); Ex. Expert 6 ¶ 176 (Hitt).

475. Most recently, in March 2021, Google announced that it would reduce commissions for the first \$1 million earned by *all* app developers to 15%—similar to Apple’s Small Business Program that had been announced earlier and is set to take effect in July 2021. Trial Tr. 3860:4–10 (Cook).
476. This pattern is contrary to the exercise of market power by Apple and instead indicates that Apple competes on price in a market with at least these other transactions platforms. Ex. Expert 6 ¶ 164 & fig. 37 (Hitt)
477. Additional price competition is introduced by other developers, on platforms besides the App Store, that negotiate individual commission rates for specific developers beneath their default 30% rate. Ex. Expert ¶¶ 163–64 (Hitt). [REDACTED]
[REDACTED] DX-3472.007; Trial Tr. 211:5–12 (Sweeney).
478. In addition, the incidence and availability of free games (and free-to-play) games has increased dramatically since Apple launched the App Store. Ex. Expert 6 fig. 38 (Hitt). The stated commission rates of app stores, discussed above, therefore overstate the effective commission rate because these platforms offer free-to-download games that do not incur commissions. Ex. Expert 6 ¶¶ 9, 179 (Hitt).
- 478.1 Epic’s head of marketing acknowledged under cross examination that, at least as of its launch, EGS’s 12% commission “was way outside the industry standard.” Trial Tr. 1249:3–25 (Allison); *see also* Trial Tr. 2327:3–5 (Cragg) (Dr. Cragg admitting that EGS’s 12% commission is “[b]elow [EGS’s] current average cost”). Mr. Allison contended that circumstances had changed in the last few months, but admitted that at his deposition and in Epic documents, the 70/30 split was referred to as the “industry standard.” DX 3955; Trial Tr. 1283:7–24 (Allison).

E. Epic’s attempts to calculate an artificial profit margin for the App Store is flawed

479. Since a reorganization in 1997, Apple no longer has separate P&L reporting for each business units, and instead reports one P&L for the entire company. Trial Tr. 2716:7–2717:6 (Schiller); Trial Tr. 3875:24–3876:12 (Cook). Apple does not separately report business units; rather, it reports company-wide figures. Trial Tr. 3876:18–20 (Cook). The benefit of this approach was that management worked together to build products and not in competition with one another. Trial Tr. 2717:7–19 (Schiller).
- 479.1 In 2020, Apple reported a total profit margin of 20.9%. DX-4581; *see also* Trial Tr. 3875:7–15 (Cook). As Apple explained in its most recent Form 10-K, despite its considerable profit, it is subject to competition in all of its lines of business. DX-4581.005. Microsoft’s witness agreed that when considering profit margins, it does not make sense to look at hardware and software as separate lines, but that one must look at related business lines in a “holistic way.” Trial Tr. 623:25–24:6 (Wright).

479.2 Epic makes no arguments based on Apple’s reported (GAAP/GAAS) financial statements, thus implicitly conceding that the reported figures do not support any claim of supracompetitive profits. Instead, Epic and its expert Ned Barnes focus on the profit margin allegedly attributable to the App Store segregated from the rest of Apple. Trial Tr. 2484:20–25 (Barnes); Ex. Expert 2 ¶¶ 2, 4 (Barnes). Apple, however—like Google, Sony, Microsoft, Samsung, and Nintendo—does not account for its app store as a separate business unit in its audited financial statements. Trial Tr. 2493:12–2494:6 (Barnes); Ex. Expert 2 ¶¶ 2, 4, 10 (Barnes). Moreover, Mr. Barnes and Dr. Evans focus on measures of operating margin, which is not a measure of economic profitability. Trial Tr. 1899:22–1900:10 (Schmalensee).

479.3 Mr. Barnes’s margin analysis relies on Apple’s internal analyses of App Store “profitability” for various purposes. *See, e.g.*, Trial Tr. 2473:20–2474:6 (Barnes); Ex. Expert 2 ¶¶ 4–6, 8–9, 16, 19 (Barnes). Apple does not dispute that these documents were prepared by its employees, but they do not accurately reflect the profitability of the App Store for at least two reasons. And Mr. Barnes conceded that for at least a subset of the documents on which he relied for his analysis, he had reviewed no witness testimony concerning those documents. Trial Tr. 2483:16–2484:3 (Barnes).

479.3.1 First, one of the documents on which Mr. Barnes relies uses a revenue-based allocation of joint costs, which ignores the fact that the App Store’s share of Apple’s revenue may be a very poor indicator of the extent to which it benefits from various joint costs, such as research and development or marketing. Trial Tr. 1902:5–10 (Schmalensee) (“There is simply no economically meaningful way to allocate joint costs among several products or services.”); Trial Tr. 1982:6–1984:1 (Schmalensee) (“[A]ny statement of profit specific to the App Store is arbitrary so . . . doesn’t have an economic meaning here.”); Ex. Expert 8 ¶¶ 115, 116 (Schmalensee); *see also* Trial Tr. 229:18–25 (Sweeney) (Q: And any effort to attribute the cost of developing shared technology to a particular product use or customer would be largely artificial, correct? A: Yes, that is my view of accounting at Epic. Q: And you also believe that any effort to attribute the cost of developing shared technology to a particular product use or service would be arbitrary, true? A: Yes, very much within Epic.”). Mr. Barnes agreed that he was not able to “opine to this Court under oath that all of the cost attributable to the App Store have been properly allocated to the App Store” in one of the document sets on which he relied, testifying that he does not “have access to the underlying detail that backs up these data.” Trial Tr. 2488:20–2489:8 (Barnes).

479.3.2 Second, Mr. Barnes’ attempts to correct for the missing costs and expenses uses a single line item from a Services line of business report and again uses a revenue-based allocation, but that continues to fail to account for the likelihood that different costs and expenses affect

Apple's various lines of business differently. Ex. Expert 8 ¶ 115 (Schmalensee). Furthermore, Mr. Barnes' use of a single line item makes it impossible for even Mr. Barnes to specify what costs and expenses are included or excluded in his calculation. *Id.*

480. There is no reliable way to identify all costs associated with running the App Store. But it is clear that the App Store P&L estimates only cover a fraction of the costs associated with running the App Store and were not fully burdened, particularly since there are substantial joint costs between Apple's hardware and software businesses. Trial Tr. 2732:25–2733:5, 2765:18–2767:7, 2791:2–10, 2884:25–2885:6 (Schiller) (cost to develop APIs for developers, WWDC, the Developers Center, the Developer Accelerators, the IAP APIs and tools, and other things are not charged to the App Store); Trial Tr. 3879:18–3880:24, 3881:11–17, 3903:1–9, 3967:6–15 (Cook) (indirect costs, including those related to R&D, are omitted). The revenues in the P&L documents cited by Epic also were not limited to the App Store. Trial Tr. 3881:11–17 (Cook).

480.1 Apple is structured as a functional unit, not as separate business units. As a result of Apple's general philosophy that its products and services are part of an ecosystem, Apple views the value of all of its products and services as a whole. Thus, Apple's business is not structured in a way that allows a person to push a button and obtain an App Store P&L. Trial Tr. 3875:16–3876:20 (Cook). Indeed, as Phil Schiller testified, Apple's businesses are so integrated that he, as head of marketing—not of product design—actually came up with the idea of “a wheel for the iPod.” Trial Tr. 2933:3–21 (Schiller). The purpose of the P&L documents relied on by Epic was not to evaluate the profitability of the App Store, but rather to use a fixed methodology and then examined trends. Trial Tr. 3878:2–13 (Cook). The documents were not shared with Apple's other business leaders and were not used to make business decisions. Trial Tr. 3880:25–3881:6 (Cook).

480.2 Examples of costs associated with the App Store include engineering costs for iOS and the related SDKs. Trial Tr. 2732:14–24 (Schiller). These costs have amounted to many billions of dollars. Trial Tr. 2877:9–18 (Schiller) (cumulative R&D investments, which impact the App Store, total “around a hundred billion dollars”); *see also* Trial Tr. 1982:22–25 (Schmalensee) (“R&D anywhere in this ecosystem is going to benefit, to a first approximation, all parts. So the allocation is not very meaningful.”); Ex. Expert 12 ¶ 22 (Malackowski).

481. As Tim Cook testified, Apple does not do P&L's at an earnings level for anything other than for the total company. Trial Tr. 3875:16–23 (Cook). So did Philip Schiller: “We became one P&L for the entire company.” Trial Tr. 2717:6, 3022:19–20 (Schiller). Mr. Barnes agreed that he was not “assessing the credibility of Apple's fact witnesses.” Trial Tr. 2478:11–12 (Barnes).

[REDACTED]

482. Most of the App Store’s major competitor platforms also generally charge a 30% commission, *see supra* § XVIII.D, so even if Apple did have higher margins than its competitors, those margins could not be the result of the App Store’s commission.
483. Epic is similar in that it does not systematically maintain P&Ls for specific business units. Trial Tr. 230:7–16 (Sweeney); Apple Ex. Depo. 1 at 141:2–19 (Babcock). Epic does not have a systematic effort to attribute the various costs of the Epic teams working on shared technology and services to particular projects. Trial Tr. 230:13–19 (Sweeney). Mr. Sweeney believes that doing so would be artificial and arbitrary, and any attempt to declare a “precise profit margin” for any particular product or service at Epic would be “fundamentally flawed.” Trial Tr. 229:18–25, 230:24–231:16 (Sweeney).

F. Apple’s profit margins are not evidence of market power

484. As noted above, Apple’s actual profit margins are much lower than that estimated by Mr. Barnes—just 20.9% in 2020. DX-4581.022. Epic has not alleged that such a profit margin is indicative of market power. But even if Epic’s calculations were reliable, the fact that a firm has high profits does not necessarily mean that it has market power. Trial Tr. 1692:25–1693:2 (Evans); Ex. Expert 7 ¶ 107 (Lafontaine). And here, the increased revenues for the App Store are driven in no small part by the fact that developers (not Apple) have increased prices for in-app purchases by over five times over the last ten years. DX-4806; Trial Tr. 2110:9–2111:21 (Hitt).
- 484.1 Nor is the fact that Apple did not consider costs when setting its commission rate, Trial Tr. 3105:12–18 (Schiller), evidence of market power, as Epic counsel appeared to suggest in Mr. Schiller’s cross-examination. Companies setting prices for digital products and services *routinely* do not consider costs where there is no marginal cost to the company for those items—indeed, Epic’s own former CFO conceded exactly that in his deposition with respect to V-Bucks. *See* Apple Ex. Depo 1 at 38:10–21 (Babcock) (Q: And so no cost was taken into account in setting [V-Bucks’s] price, is that correct? . . . A: None that I’m aware of. Q: And so there’s no marginal cost to you of creating a V-Buck; is that correct? A: None that I’m aware of.).
485. When evaluating market power, profitability is one consideration among many. Ex. Expert 8 ¶ 111 (Schmalensee). Economists generally consider two broad categories of evidence, both of which look beyond profitability: (i) “market structure” and (ii) “market outcomes” such as price, quantity, and quality. Ex. Expert 7 ¶ 95 (Lafontaine).
- 485.1 Evidence of market structure can help establish that an unconcentrated market with many small competitors is likely to be competitive, but the inverse is not always true—a concentrated market does not always imply the existence of market power. Ex. Expert 7 ¶ 95 (Lafontaine).
- 485.2 Market outcomes have their own nuances. Market outcome measures, particularly profit, can be difficult to measure appropriately because price can be measured in so many ways. Ex. Expert 7 ¶ 98 (Lafontaine). Further, consumers care about

quality-adjusted price, not just about absolute price. *Id.* Even when price is correctly analyzed, it often must be considered alongside other factors, such as output. *Id.* If a firm increases the quality of its product, for example, a corresponding increase in price is not necessarily anticompetitive. *Id.* For a two-sided transaction platform with a complex pricing structure, a single unambiguously best summary measure of price may not exist. Ex. Expert 8 ¶ 108 (Schmalensee). Finally, the presence of network effects may constrain even a firm with market power from charging supracompetitive prices because of its effect on the other side of the platform. *Id.*

486. Both categories of evidence—market structure and market outcomes—are inconsistent with Apple possessing monopoly power or charging supracompetitive prices. Regarding market structure, as discussed more fully below, Apple has a low share of a properly defined market. Ex. Expert 6 ¶ 8 (Hitt); *see infra* § XVIII.G–H. And as described above, market outcomes demonstrate that Apple does not exercise market power because output and quality have increased while price has decreased. *See supra* § XVII.A–C.
487. Dr. Evans’ analysis of Apple’s profit vis-à-vis market power is erroneous. His suggestion that the App Store’s commission is supracompetitive is inconsistent with his claim that Apple charges *less* than the profit-maximizing commission rate. Ex. Expert 7 ¶ 108 (Lafontaine). And Dr. Evans’ suggestion that Apple earns an unusually high profit margin on the App Store as a type of direct evidence of monopoly power is wrong for at least three reasons.
488. First, in differentiated product industries such as this one, price premiums well above marginal costs are to be expected and are not, on their own, evidence of supracompetitive pricing. Ex. Expert 7 ¶ 107 (Lafontaine). Most markets involve differentiated products, and entertainment products are classic examples of differentiated products. *Id.* Operating systems for other devices are differentiated from iOS, *i.e.*, they may not be perfect substitutes for iOS. Ex. Expert 6 ¶ 229 (Hitt). But that is irrelevant identifying the relevant substitutes for this case: digital game transactions for developers and consumers. *Id.* The fact that products are not identical does not imply a lack of competition. *Id.* For example, as Apple competes for games transactions with other transaction platforms, including those that facilitate only game transactions, it faces competitive constraints in its pricing for game transactions from a variety of sources, not all of which offer every service or feature that an iOS device offers. Ex. Expert 6 ¶¶ 227–29 (Hitt).
489. Second, economists generally do not consider accounting profits to be an accurate measure of economic profits, especially for firms like Apple that invest substantially in intellectual property. Ex. Expert 7 ¶ 107 (Lafontaine); *see also* Trial Tr. 1548:15–21 (Evans) (“[A]ccounting profits and economic profits are not the same thing.”), Trial Tr. 1694:23–25 (Evans) (“Q. Do the documents that you are using show profits as a return on invested capital? A. They do not.”); Trial Tr. 1899:9–1900:10 (Schmalensee). Dr. Evans conceded that profit margin alone does not show monopoly power. Trial Tr. 1695:25–1696:2 (Evans).

490. Third, Dr. Evans improperly inflates the App Store's margins by failing to allocate to the App Store any of the broader Apple ecosystem costs that contribute to the success of the App Store. Ex. Expert 7 ¶ 107 (Lafontaine); *see also* Trial Tr. 1696:2–6, 1698:15–25 (Evans). As Dr. Evans explained to the FTC, the reason that a small portion of iOS revenue is attributable to the App Store is that Apple's business model for the App Store is "based on selling handsets and driving positive feedback effects." Trial Tr. 1700:10–16 (Evans); DX-5550. He also used a faulty understanding of research and development costs based on extrapolation of costs from other business lines within Apple. Trial Tr. 1558:15–25 (Evans).
491. Even when using the accounting profits that do not fully account for joint costs, however, [REDACTED] Trial Tr. 1730:17–1731:15 (Evans). In comparison to other large platform businesses, this figure is not outside the norm. Ex. Expert 8 ¶ 112 (Schmalensee).
492. Indeed, neither Apple's nor the App Store's margins are indicative of market power when compared to Epic. *Fortnite's* gross profit margin was over 86% in the third quarter of 2017, DX-3657, and was over 68% in the first quarter of 2018, DX-3901. In 2019, Epic earned \$1.83 billion in gross profits, resulting in an overall gross profit margin of 43%. DX-3467.003. Epic projected \$3.85 billion in total revenue and a gross profit margin of 40% for 2020. DX-4376.008.
- 492.1 Importantly, while Dr. Evans' discussion of App Store profits is both wrong and irrelevant to market power more generally, it also is unrelated to the market he attempted to defined for app distribution services, which he expressly explained does *not* include in-app purchases. Trial Tr. 1052:15–1503:18 (Evans). Dr. Evans did not provide a profitability analysis for Apple's distribution services, or a profitability analysis for the App Store that excluded Apple's revenues and costs related to in-app purchases.
- 492.2 Dr. Evans' comparisons of profitability across a group of companies are irrelevant because those companies are not comparable or benchmark companies. Trial Tr. 1900:11–1901:1 (Schmalensee). Mr. Barnes admitted that he did not "conduct a search for online marketplaces that are comparable to the App Store" in conducting his analysis, Trial Tr. 2490:20–22, 2491:7–11 (Barnes); *see also* Trial Tr. 2494:20–24 (Barnes), and that he did not attempt to calculate a profit margin for any of the competing platforms to the App Store, Trial Tr. 2491:17–2492:12 (Barnes).
- 492.3 Moreover, Epic's supposed evidence of high-profit margins does not show profits as a return on invested capital. Trial Tr. 1429:23–25 (Evans).

G. Apple's market share belies market power

493. Apple has a low share of a properly defined relevant antitrust market, *i.e.*, the game app transactions market.
- 493.1 There are multiple measures of output that can be used to measure market shares in a two-sided transaction market like the digital game transactions market, including

by (i) the number of game transactions that treats each transaction equally, regardless of the consumer price or value of the app or in-app purchase, or (ii) the dollar value of game transactions facilitated. Ex. Expert 6 ¶ 137 (Hitt); Ex. Expert 8 ¶ 81 (Schmalensee). Dollar value is the better measure because developers can sell in-app currencies (such as V-bucks) at different price increments, and there does not appear to be market-wide measures of the number of game transactions. Ex. Expert 6 ¶ 137 (Hitt).

- 493.2 Measured in dollar value of game transactions facilitated, Apple's share of the game app transactions market is between 23.3–37.5%. Ex. Expert 6 ¶ 8 (Hitt). It is difficult to pinpoint an exact percentage of market share due to complications in data reporting, including that (i) there is no single source for the total revenue of the digital game transactions market or its individual components, and (ii) industry sources vary in terms of what types of transactions they include in their revenue estimates and how revenues are categorized. Ex. Expert 6 ¶¶ 137–39 (Hitt). Market share measurements are also complicated by the various types of revenue that could be included in the analysis, such as digital transactions, subscriptions, and boxed games. Ex. Expert 6 ¶¶ 137–40 (Hitt). The range of 23.3–37.5% accounts for these variables. Ex. Expert 6 ¶¶ 139–40 (Hitt). But the most appropriate estimate is likely on the lower side of this range, which encompasses a market with single-sided platforms—distribution methods that Epic's chief economic expert, Dr. Evans, agrees would compete with two-sided transaction platforms like the App Store. Trial Tr. 1672:18–1673:3 (Evans) (agreeing that “one-sided businesses can compete in the same market with two-sided platforms”); Ex. Expert 1 ¶¶ 21, 122 (Evans); Ex. Expert 6 ¶ 141 (Hitt); *see also* DX-4178.008 (internal analysis calculating a 27% worldwide market share in 2017 for the App Store).
- 493.3 Even at a conservative estimate, Apple's competitors in the game app transactions market comprise over 60% of the market. Ex. Expert 6 ¶¶ 140–41 (Hitt). Several such competitors, such as Google Play and Samsung Galaxy Store, launched after the App Store, which is consistent with low barriers to entry in this market. Ex. Expert 6 ¶ 142 (Hitt); Ex. Expert 8 ¶ 119 (Schmalensee).
- 493.4 Epic's data is consistent with Apple's limited market share in the game app transaction market. iOS accounts for less than 10% of total *Fortnite* revenue through 2020, since launch. Trial Tr. 344:7–12 (Sweeney); Trial Tr. 1352:10–14 (Weissinger) (“iOS devices accounted for about 10 percent of *Fortnite* play while *Fortnite* was on iOS.”).
494. Apple's limited market share is consistent with the entry of new participants in the game app transactions market.
- 494.1 After the App Store launched, many competing transaction platforms and other competing services have entered the marketplace, including Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, and online game streaming services. Trial Tr. 2748:7–13 (Schiller); Trial Tr. 3865:23–3867:5 (Cook); Ex. Expert 8 ¶ 107 (Schmalensee).

- 494.2 The entry of these competing game transaction platforms limits Apple's market power and is evidence that potential barriers to entry have not excluded new entrants from the market. Ex. Expert 6 ¶ 142 (Hitt). There is no evidence of restriction in output; the total revenue of digital game transactions has risen for the market overall. Ex. Expert 6 ¶ 270 (Hitt). These new competitors demonstrate that alleged barriers to entry are not sufficient to restrict entry. As a result, actual and potential entry imposes constraints on Apple's market power. Ex. Expert 8 ¶ 119 (Schmalensee).
495. Apple's market share is also consistent with its decision to permit cross-platform play. *See supra* § VII.C.
- 495.1 Apple's cross-platform policy allows users to download and subscribe to an app on another platform and then download the same app on the App Store without paying for a second subscription. Trial Tr. 2803:12–2804:11 (Schiller).
- 495.2 Apple's cross-platform policies have contributed to *Fortnite*'s success as a cross-platform game. As Mr. Sweeney recognized, Apple has never had any express policy prohibiting cross-platform play, Trial Tr. 108:2–11, 197:1–14, 233:2–12 (Sweeney), and permits V-Bucks purchased anywhere to be used in *Fortnite* on iOS so long as Epic also makes those V-Bucks available for purchase on iOS. Trial Tr. 233:2–8 (Sweeney). Apple does not take any commission or earn any money for V-Bucks purchased on another platform. Trial Tr. 197:15–21 (Sweeney). Many iOS *Fortnite* players take advantage of the ability to use V-Bucks consistently across platforms: About one-third of iOS players who have purchased V-Bucks on iOS have also purchased V-Bucks on other platforms. Ex. Expert 6 ¶ 74 & fig. 15 (Hitt).
- 495.3 In contrast, Epic had to negotiate with Sony and Microsoft to get those companies to permit cross-platform *Fortnite* play on their platforms. *See supra* § XI.B; Trial Tr. 107:2–10, 252:8–255:16 (Sweeney); DX-3125.

H. The relevant game app transaction market is not highly concentrated

496. The App Store has many competitors, including other game transaction platforms—for mobile, PC, and console—as well as game streaming services. *See supra* § X; Trial Tr. 2867:1–20 (Schiller); Trial Tr. 3865:23–3867:5 (Cook).
497. Because data on the number of game transactions is not readily available, the dollar value of game transactions facilitated is the most appropriate measure for estimating market share. Ex. Expert 6 ¶ 137 (Hitt). This requires determining two measures: (1) total revenue for digital game transactions on the App Store in the U.S., and (2) total revenue for digital game transactions across all digital game transaction platforms in the U.S. Ex. Expert 6 ¶¶ 137–38 (Hitt).
498. Total revenues from game transactions in 2018 on the App Store were [REDACTED]. Ex. Expert 6 ¶ 117 (Hitt).

499. The total marketwide revenues from game transactions in 2018 was \$29.7 billion. Ex. Expert 6 ¶ 184 (Hitt).
500. Apple's market share based on total revenue from game transactions is therefore between 23.3% and 37.5%. Ex. Expert 6 ¶¶ 138, 140 (Hitt). This market share is inconsistent with Apple's ability to exercise market power. Ex. Expert 6 ¶¶ 140–41. Indeed, this lack of concentration in the market suggests Apple does not possess monopoly power. Ex. Expert 6 ¶ 141 (Hitt).

I. Existing transaction platform rivals have the ability to expand output

501. Epic's principal economist testified that Apple "deserves a lot of credit" for the explosion of the digital economy. Trial Tr. 1470:7–9 (Evans). Apple has not exercised market power to reduce output in the market for digital game transactions. Ex. Expert 6 ¶ 181 (Hitt).
502. In addition to the competitors already discussed above, many game streaming services, including Amazon Luna, Google Stadia, Microsoft xCloud, and Nvidia GeForce Now have entered and become competitive constraints on Apple. Trial Tr. 2119:20–2120:20 (Hitt); Ex. Expert 6 ¶¶ 143–45, 149 (Hitt); Ex. Expert 8 ¶ 120 (Schmalensee). Developers can reach a significant proportion of game consumers through these game streaming services. Trial Tr. 2119:20–2120:20 (Hitt); Ex. Expert 6 ¶¶ 147–49 (Hitt). Recognizing this fact, many companies are investing heavily in streaming services; for instance, Microsoft is "investing millions of dollars in" its xCloud service. Trial Tr. 618:4–11 (Wright).
503. Apple's App Store Guidelines explicitly permit game streaming on the iOS platform through an internet browser, a Web app, or a remote desktop. PX-2790.18–.19.
- 503.1 For instance, Nvidia GeForce Now is accessible on iOS through the Safari web browser, and users can create a shortcut icon that looks like a normal application. Trial Tr. 430:10–431:5, 475:10–17 (Patel). From there onwards, it is a PC gaming experience. Trial Tr. 426:16–18, 455:5–10 (Patel). It is also possible to make in-game purchases while playing on iOS, and those purchases go directly through Steam or the Epic Games Store even if the customer is playing on iOS. Trial Tr. 474:4–20 (Patel).
- 503.2 Using GeForce Now, iPhone and iPad users can play games that were purchased in either Steam, the Epic Games Store, or from other publishers directly as long as they have agreed to be in Nvidia's service. Trial Tr. 425:1–11, 471:11–13 (Patel). And GeForce Now provides a good gaming experience when run through Apple's Safari browser—for some users, streaming on GeForce Now offers a better service than playing the same game on their native machines. Trial Tr. 456:10–17, 467:13–468:2, 471:14–473:5 (Patel). Indeed, GeForce Now's Director of Project Management agreed that "the GeForce Now service [feels] extremely responsive, and one cannot detect any lag between the inputs and the character[']s onscreen action." Trial Tr. 469:4–13 (Patel); *see also* Trial Tr. 468:23–1 (Patel) (agreeing that "GeForce Now offers a near flawless experience").

503.3 Fortnite is already available through GeForce Now on several devices and is scheduled to become available through GeForce Now for iOS in 2021. Trial Tr. 457:2–20, 461:25, 477:13–15 (Patel).

503.4 GeForce Now has “had [an] overwhelming positive response” from the gaming community and has grown quickly and is continuing to add new users, with a goal of doubling its 5 million users to 10 million this year. Trial Tr. 458:12–24 (Patel); DX-3815.001. GeForce Now is “absolutely” trying to reach “every gamer out there.” Trial Tr. 458:6–11 (Patel).

503.5 Further, Epic is in negotiations to add *Fortnite* to Amazon’s game streaming service. Apple Ex. Depo. 6 at. 105:2–105:14 (Rein). This would add yet another substitute for users who want to play *Fortnite* on something other than an iOS device, further constraining Apple from exercising market power. Ex. Expert 6 ¶¶ 147–49 (Hitt). The constraint is particularly powerful because switching costs have reduced over time—in other words, switching has “gotten easier.” Trial Tr. 2849:7–21 (Schiller).

503.6 Epic at one point also negotiated with Wal-Mart to launch a game streaming service. Apple Ex. Depo 6 at 102:14–20 (Rein).

504. The entry of these competing platforms or streaming services indicates Apple lacked the market or monopoly power to exclude competition. Ex. Expert 8 ¶¶ 120, 123, 124 (Schmalensee).

505. Game streaming services also are becoming an increasingly strong substitute for initial game purchases because they provide similar access to a game that could be obtained by an initial purchase. Trial Tr. 2119:20–2120:20 (Hitt); Ex. Expert 6 ¶¶ 143–44 (Hitt).

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506. Consistent with the launch of multiple competing firms, the total output of digital game transactions has increased over time. Trial Tr. 2083:8–18 (Hitt); Ex. Expert 6 ¶¶ 184, 189–90 & fig. 45 (Hitt). So have sales of devices for playing games, including new and popular consoles. Ex. Expert 6 ¶¶ 186, 189–90 (Hitt).

J. Apple is constrained by indirect network effects, which limit a platform's ability to raise overall prices

507. The App Store is a two-sided transactions platform that exhibits strong indirect network effects between consumers seeking high-quality apps and developers seeking access to Apple's large customer base as well as interconnected pricing and demand. *See* § XII; Ex. Expert 8 ¶¶ 43, 44 (Schmalensee).

508. These strong indirect network effects constrain Apple's ability to raise prices because even small price increases may not be profitable where indirect network effects are strong. Ex.

Expert 8 ¶¶ 3, 27, 29 (Schmalensee). If Apple were to raise commission rates charged to developers, the reduction in developers transacting through the App Store would also lead to a reduction in consumers transacting through the App Store due to indirect network effects. This can lead to a downward spiral. Ex. Expert 8 ¶¶ 29, 120 (Schmalensee); *see also* Trial Tr. 761:8–12 (Grant) (Epic is “diligent” about enforcing its own rules for Fortnite to avoid a “downward spiral” with its player base).

509. The risk of developers leaving the App Store is significant, particularly with respect to game developers that have the ability to operate on multiple transaction platforms. In this very case, Epic took actions it knew would likely lead to its removal from the App Store. Trial Tr. 171:10–15 (Sweeney); *see also supra* § X.
510. [OMITTED]
511. Indeed, Apple has *reduced* its commission at various times rather than lose out on categories of developers, which would reduce the overall attractiveness of the App Store to consumers. *See supra* § VII.C; Trial Tr. 2088:1–14 (Hitt); Ex. Expert 6 ¶¶ 159, 166 (Hitt). Apple’s reader rule—discussed above—is just one example. *See supra* § VII.C; Trial Tr. 3196:8–3197:18 (Schiller); Ex. Expert 6 ¶ 206 (Hitt).

K. Apple is constrained by alternative options for monetization

512. Developers need not even leave the App Store to constrain Apple’s ability to raise prices. Trial Tr. 2093:2–20 (Hitt); Ex. Expert 6 ¶¶ 204–08 (Hitt). If Apple sought to raise its commission, for example, developers could monetize through content or digital currencies sold to consumers through another transaction platform or directly through a web browser (including a web browser on an iOS device). Trial Tr. 2093:12–20 (Hitt); Ex. Expert 6 ¶¶ 204–08 (Hitt). Developers also could use subscriptions that consumers could use within an iOS app but are sold through another transaction platform or directly through the web browser (including a web browser on an iOS device). Trial Tr. 2093:12–20 (Hitt); Ex. Expert 6 ¶ 206 (Hitt). Developers also could shift to a model that used in-app advertising or a model that monetizes through in-app promotions and events. Trial Tr. 2093:2–20 (Hitt); Ex. Expert 6 ¶ 206 (Hitt). These alternative monetization options constrain Apple, leading it to introduce new features in order to keep developers on the App Store, such as enabling certain gaming streaming apps to be on the App Store—a feature not offered by the console platforms like Xbox. Trial Tr. 604:3–17 (Wright).
513. As discussed in § VII.C, Apple’s multi-platform rule permits game app developers to sell content outside of the iOS app (e.g., selling content directly from websites) that users can then access in the iOS app. Developers could also offer alternative packages and further discounts that are not available on iOS, or through traditional retail channels. Ex. Expert 6 ¶¶ 205–07 (Hitt); Ex. Expert 7 ¶ 108 (Lafontaine).
514. Cross-platform play allows Epic to sell V-Buck transactions outside the App Store that can be used in the iOS version of the game, including through the iPhone’s browser. Trial Tr. 2139:18–2140:15; 2228:4–16 (Hitt); Ex. Expert 6 ¶¶ 52–53, 205 (Hitt). V-Bucks can also be sold in physical stores. Trial Tr. 3238:4–11 (Schmid). And many *Fortnite* players on

iOS devices in fact make purchases, including purchases of V-bucks, on alternative game transaction platforms. Trial Tr. 2136:22–2137:21 (Hitt); Ex. Expert 6 ¶¶ 69, 72–73 (Hitt). Indeed, roughly two-thirds of iOS *Fortnite* players who made purchases did so *exclusively* on other platforms. Trial Tr. 2136:22–2137:21 (Hitt); Ex. Expert 6 ¶ 74 & fig. 15 (Hitt). Thus, Epic is able to monetize *Fortnite* on iOS devices without paying a commission to Apple. Trial Tr. 2136:22–2137:21; 2139:18–2140:15; 2228:4–16 (Hitt); Ex. Expert 6 ¶¶ 52, 204–08 (Hitt).

514.1 Popular games such as Hearthstone, Roblox, Candy Crush, PUBG Mobile, and Call of Duty: Mobile also allow users to make purchases on the web or other locations outside of their native iOS apps. Trial Tr. 3231:18–3237:20 (Schmid).

515. Other developers have chosen to use such monetization strategies. For example, in May 2016, Spotify chose to no longer allow any paid transactions through the App Store, entirely removing the possibility of new customers signing up for Spotify’s premium service through in-app purchases. Trial Tr. 2152:9–16 (Hitt); Ex. Expert 6 ¶ 102 (Hitt). While Spotify’s iOS in-app purchase revenue fell over time (but did not dry up entirely as it still offered subscriptions), its U.S. user base continued to grow. Ex. Expert 6 ¶¶ 102–04 (Hitt). The number of initial downloads of the Spotify app each month did not decrease over time after Spotify’s shift to monetizing entirely without methods that generate commissions for Apple, and the share of Spotify (paid and free) listeners attributable to iOS continued to grow, meaning that Spotify subscriptions successfully switched to monetization (*i.e.*, making app transactions) outside of the App Store. Ex. Expert 6 ¶¶ 102–04 (Hitt); *see* Trial Tr. 2152:16–18 (Hitt) (explaining that there was “[n]o change in revenue and no indication of any sort of change in the use of iOS app”).

516. Netflix is another example. Trial Tr. 2152:9–16 (Hitt). While Netflix previously allowed in-app purchases of subscriptions, it stopped allowing in-app purchases of subscriptions for new customers through the App Store. Trial Tr. 2152:9–16 (Hitt); Ex. Expert 6 ¶ 105 (Hitt). The removal of new subscriptions from in-app purchases was not associated with lower total revenue for Netflix. Trial Tr. 2152:16–18 (Hitt); Ex. Expert 6 ¶ 105 (Hitt)..

L. Developers’ countervailing power, including Epic’s leverage over platforms, constrains Apple

517. Because developers have many options for distribution and monetization, they exercise significant power over platforms. As Mr. Sweeney summarized, “developers have the real power in the industry” because “where developers go customers will go with them.” DX-3199.002.

517.1 Epic proves the point. As Epic has stated, Apple was always the “lowest or second lowest” revenue-generating platform for *Fortnite*. Apple Ex. Depo 1 at 173:12–16 (Babcock). Epic realized “that there’s a better than 50% chance Apple and Google will immediately remove the games from their stores the minute we do this.” DX-4419.001.

- 517.2 In the 11 months prior to *Fortnite*'s removal from the App Store, Apple sent just under \$1 million in marketing support—"far more than any other game" Apple's head of games business development had seen "at that point more than [he's] seen since." Trial Tr. 3248:25–3249:5 (Schmid).
518. Apple is further constrained by consumers' ability to switch platforms and related indirect network effects. Ex. Expert 6 ¶¶ 209–14 (Hitt).
- 518.1 Consumers can—and do—switch transaction platforms. See § XVI. Consumers own multiple devices and have access to multiple games platforms that are reasonably interchangeable for the purpose of game transactions. See *id.* Consumer behavior shows that they access *Fortnite* on various devices and platforms. See *id.*; Ex. Expert 6 ¶¶ 68–76 (Hitt).
- 518.2 Epic recognizes consumers' ability to switch platforms. [REDACTED]
[REDACTED]
[REDACTED]. DX-4133.012. More recently, Epic's "Free *Fortnite*" campaign following the removal of *Fortnite* from the App Store demonstrates that its users could (and Epic knew they could) substitute between platforms. Ex. Expert 6 ¶ 99 (Hitt).
- 518.3 Behavior of *Fortnite* users on iOS after *Fortnite*'s removal from the App Store confirms that consumers can and do switch operating platforms. Nearly all *Fortnite* users on iOS regularly use other devices that could be used to play *Fortnite* and conduct in-game purchases. Ex. Expert 6 ¶¶ 57–58, 61–62 (Hitt). After *Fortnite* was removed from the App Store, Epic retained over 80% of iOS *Fortnite* users' pre-hotfix revenue (across all transaction platforms) in the four-month post-hotfix period. Trial Tr. 2145:1–2 (Hitt); Ex. Expert 6 ¶ 97 & fig. 20 (Hitt). Epic retained 40–50% of its revenue for iOS single-homers and 86–93% of its revenue for iOS multi-homers. Ex. Expert 6 ¶ 97 (Hitt). This retention happened in large part because both iOS single-homers and iOS multi-homers switched a significant amount of their pre-Hotfix spending made through the App Store to other non-iOS, non-Google platforms in the post-Hotfix period. Ex. Expert 6 ¶ 97 (Hitt).
- 518.4 Dr. Evans contends that the removal of *Fortnite* from the App Store constitutes a decline in "quality" that is more serious than a 5–10% price decline. Trial Tr. 1528:21–1529:16 (Evans). But he analyzed only the removal of *Fortnite*, a single app, not a system-wide quality decrease, and whether that would cause substantial switching. Trial Tr. 1528:21–25 (Evans) (looking only at "this particular case, the removal of *Fortnite* from the App Store").

XIX. The Conduct Challenged by Epic Is Not Anticompetitive

- A. The "technical restrictions" that Epic complains about are genuine product improvements
519. Epic claims that Apple's anticompetitive conduct includes designing technical restrictions into iOS that prevent users from downloading app stores or apps directly from websites.

Dkt. 1 ¶ 65. Despite its Complaint, Epic had only two “major disagreements” with Apple policies when it filed suit—a prohibition on third party app stores on iOS and Apple’s IAP and 30% commission—and Apple’s policy against sideloading was not one of those “major disagreements.” Trial Tr. 89:5–12, 165:5–16 (Sweeney). Epic also does not “challenge Apple’s right to take a fee for the distribution of these paid apps.” Trial Tr. 164:7–16 (Sweeney).

520. Epic’s allegations center on the App Store restrictions, not on the technological design of the iPhone itself, which was released a year prior to the App Store. Trial Tr. 1673:18–1674:18 (Evans); Ex. Expert 1 ¶¶ 37–42, 94, 96–98 (Evans).
521. iOS is a novel and proprietary operating system, protected by Apple’s intellectual property and developed at extraordinary cost by Apple. Trial Tr. 2877:9–18 (Schiller) (Apple’s cumulative R&D investments total “around a hundred billion dollars”); Trial Tr. 2732:6–8 (Schiller) (SDKs made available to developers are Apple’s intellectual property); Ex. Expert 12 ¶ 69 (Malackowski); *see also* Trial Tr. 1710:12–18 (Evans) (Dr. Evans acknowledging that “the platform and the channel [for iOS app distribution] is all technology developed by [Apple],” and, “for that channel to be used, you have to use [Apple’s] technology,” all of which is “proprietary”). The development of iOS was informed by decades of experience with macOS in the desktop and laptop environment. *See supra* § IV.B. Apple sought to leverage that experience, improve upon macOS, and adapt the new operating system to the unique features of mobile devices. *See supra* § IV.B.
522. iOS contains many features that improved security, reliability and stability for software. *See* § IV.B. iOS provides layers of protection to protect user data, including app code signing, sandboxing, entitlements, and reservation of private APIs. *See* § IV.B; *see also generally* Ex. Expert 11 (Rubin).
523. Apple also designed certain restrictions on the addition and removal of apps. For example, there are restrictions on the removal of pre-installed apps. Ex. Expert 11 ¶ 91 (Rubin). In addition, Apple designed iOS so as not to facilitate sideloading of third-party applications. Ex. Expert 8 ¶ 74 (Schmalensee); Ex. Expert 11 ¶ 54 (Rubin). These technical improvements were intended to protect the security and privacy features of the phone, among other things. Trial Tr. 3423:6–15 (Federighi); Apple Ex. Depo. 9 at 66:4–10; 143:4–12; 145:3–8 (Forstall). And Apple’s decision to implement them was reasonable. Ex. Expert 11 ¶ 71 (Rubin).
524. The App Store also was a novel innovation that improved upon preexisting software distribution methods. As discussed above, the App Store was a dramatic departure from the cumbersome and expensive mobile app distribution process that preceded it. *See supra* § VII. And with Apple’s continued innovation since, including the introduction of IAP and the continual development of SDKs, APIs, hardware improvements, and the like, Apple has dramatically improved the platform. *See supra* §§ III; VIII. By both quantitative and qualitative measures, this has been a tremendous boon for both consumers and developers. *See supra* §§ VIII, XVIII.A, XVIII.C.

525. Lifting the challenged technical restrictions—particularly the prohibition on sideloading—would greatly undermine these improvements.

525.1 Sideloading introduces security risks to users, allows installation of unreviewed apps that might install malware or otherwise might grant themselves entitlements to a broad array of hardware and software in order to, for example, access privileged functionality without alerting the user, and makes it difficult to keep sideloaded apps up-to-date and secure, Ex. Expert 11 ¶ 54 (Rubin), which Epic’s security expert agrees ultimately harms developers and Apple should be permitted to prevent, Trial Tr. 2682:19–20, 2683:20–23 (Mickens). In the absence of Apple’s restrictions on distribution, “the level of attack, the kind of attack, [and] the sophistication of attack, would be greater.” Trial Tr. 3495:22–3496:4 (Federighi). “So the result for safety of the user against malware would change,” even if “[t]he technical countermeasures, the protections, would still be in place[.]” *Id.*

525.2 Sideloading impacts “Apple ability to enforce its privacy policies” because many developers may not want to comply with Apple’s privacy policies and “would seek distribution from distribution points that don’t have those protections,” which would force users “to download from those alternatives if they wanted to get those apps.” Trial Tr. 3423:5–15 (Federighi).

525.3 Each of these risks counteracts the improvements in security and privacy that Apple consistently has made over time. Users have trust and confidence in the App Store as “a trusted source of apps.” Trial Tr. 3421:16–3422:7 (Federighi). Because of this, developers “are very free about trying out new software,” and “[a]nd that’s helped build this really unprecedented scale of activity for developers.” *Id.* If Apple were required to allow sideloading for iOS devices, users may start having bad experiences and become more wary of downloading from the App Store, which would mean less opportunity for developers, especially for new developers. *Id.*

B. The “contractual restrictions” challenged by Epic do not constitute anticompetitive conduct

526. The contractual restrictions challenged by Epic include: (1) Section 3.2(g) of the DPLA, which requires that developers distribute native iOS developed using Apple’s IP apps through the App Store; (2) Section 3.3.2(b) of the DPLA, which prohibits apps that create a store or storefront for other code or applications; and (3) the App Store Review Guidelines, to which the DPLA requires iOS developers to adhere and which do not permit the creation of an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store. Dkt. 1 ¶¶ 68–69, 71–72, 77, 79–80.

527. First, the contract terms Epic challenges are an integral part of a procompetitive intellectual property licensing arrangement. The “Purpose” section of the DPLA sets forth that the purpose of the agreement is to facilitate the sharing of Apple’s intellectual property. Trial Tr. 3703:14–24 (Malackowski); *see also* DX-3900.001.

- 527.1 The rights licensed by the DPLA are Apple’s intellectual property—including copyrights, patents, trade secrets, and trademarks—and have value to Epic and developers in general. *See supra* § V; Ex. Expert 12 ¶¶ 40–42 (Malackowski). As Mr. Malackowski explained, Epic has no right to use Apple’s proprietary software, tools, or services without being granted those rights pursuant to a license agreement. Ex. Expert 12 ¶ 42 (Malackowski). Epic’s employees agree. Apple Ex. Depo. 5 at 46:15–23, 25 (Penwarden).
- 527.2 The DPLA is a procompetitive license. By allowing developers to integrate Apple’s IP with their own innovations, they have created over a million new applications. Ex. Expert 9 ¶ 15 (Rubin). Because of Apple’s IP licenses, today, users can access approximately 2 million apps, around 84 percent of which are entirely free. Trial Tr. 2767:13–15, 2846:11–12 (Schiller); Ex. Expert 9 ¶ 15 (Rubin). In return, the licensing agreement allows innovators to receive returns on their investments. Ex. Expert 12 ¶¶ 16–18 (Malackowski); *see also* Trial Tr. 3605:13–3606:14 (Malackowski) (describing procompetitive effects of exclusivity rights and licensing).
- 527.2.1 It is a typical business practice to have a single set of terms that applies to many developers such as Apple does. Trial Tr. 413:22–414:17 (Simon) (developer testifying that he can think of no instance in which a license agreement was negotiated; it is not objectionable to set standard terms and conditions).
- 527.3 The distribution terms that Epic challenges serve the valid procompetitive purposes of the DPLA licensing arrangement. *See* Trial Tr. 2396:7–23 (Evans) (Dr. Evans recognizing property rights “ultimately serves consumers who, through the market, benefit from improvements in products and processes”). Preventing developers from using Apple’s IP to distribute outside the App Store is a legitimate mechanism to reinforce Apple’s technical restrictions, protecting consumers and devices, and prevent free-riding and avoidance of Apple’s commission. Ex. Expert 12 ¶ 42 (Malackowski). Free-riding would exploit not only Apple’s historical innovations and investments but also Apple’s willingness to continue to make such innovations and investments in the future. Ex. Expert 12 ¶¶ 42, 64 (Hitt). Mr. Sweeney admitted that Epic’s “paramount goal” is to build a metaverse “by reaching the entire base of Apple’s 1 billion iPhone consumers.” Trial Tr. 112:7–17 (Sweeney). With respect to paying commissions to console makers, Mr. Sweeney stated, “We subscribe to the idea of subsidized hardware and felt that we were a beneficiary of that.” Trial Tr. 160:23–161:2 (Sweeney).
528. Second, there is no exclusivity requirement in the Developer Agreement or DPLA that would support Epic’s claim that Apple has engaged in anticompetitive conduct.
- 528.1 There is no restraint on developers’ ability to develop software for other platforms. Developers may develop and distribute apps—even substantively identical apps—through other platforms. Ex. Expert 6 ¶¶ 27, 48 (Hitt). Epic’s business model is a clear illustration of multi-channel game distribution. Ex. Expert 6 ¶ 35 (Hitt).

- 528.2 The DPLA's reasonable restrictions on the use of Apple's valuable intellectual property are clearly spelled out to developers. Ex. Expert 12 ¶ 42 (Malackowski). For example, "In order to use the Apple Software and Services, You must first accept this Agreement. If You do not or cannot accept this Agreement, You are not permitted to use the Apple Software or Services. Do not download or use the Apple Software or Services in that case." PX-2619.002. The DPLA explains to developers that "Applications developed under this Agreement for iOS Products, Apple Watch, or Apple TV can be distributed in four ways: (1) through the App Store, if selected by Apple, (2) through the Custom App Distribution, if selected by Apple, (3) on a limited basis for use on Registered Devices (as defined below), and (4) for beta testing through TestFlight." *Id.*
529. Moreover, there are ways to distribute apps for iOS devices without signing the DPLA or abiding by the App Review Guidelines.
- 529.1 As an initial matter, the DPLA applies only to apps "developed using the Apple Software." PX-2619.016 (§ 3.2(g)).
- 529.2 As Apple's agreements recognize, "there is always the open Internet." PX-2790.1. Indeed, Apple is committed to providing "a great web experience too," through iOS web browsers, for apps "[i]f the App Store model and guidelines are not best for your app or business idea." PX-2790.1.
- 529.3 And game streaming apps have presented yet another new avenue for app distribution. Trial Tr. 3866:14–22 (Cook); Ex. Expert 8 ¶ 120 (Schmalensee). These include Google Stadia, Nvidia's GeForce Now, Microsoft Xbox Cloud Gaming, and Amazon's Luna. Trial Tr. 178:7–14, 256:16–25, 257:10–15 (Sweeney); Trial Tr. 442:5–12 (Patel); Ex. Expert 8 ¶ 120 (Schmalensee).
- C. Like Apple, other games transaction platforms, including Nintendo, Sony, and Microsoft, have "walled gardens"**
530. Apple has always used a "walled garden" approach to the App Store. *See supra* §§ III, IV, VI. The walled garden is a valid business strategy, widely employed among game app transactions platforms, that benefits app developers and consumers. *See infra* FOF 534.1. Epic's lead economist conceded that the "walled garden" approach—and the contractual and technical restrictions that effect that approach—was "benign" from an antitrust perspective when it was introduced, and further conceded that there have been no material changes to the DPLA since the launch of the App Store. Trial Tr. 1673:12–17, 1674:14–18 (Evans).
531. There is no dispute that quality, integrity, and security are important to the success of a transaction platform. When Epic "sell[s] a product to customers, [it too] feel[s] [it] ha[s] a responsibility to moderate for a reasonable level of quality, and also a reasonable level of decency." DX-3199.003.
532. A walled garden allows Apple to maintain the integrity and security of iOS devices. Trial Tr. 3851:4–14 (Cook). Indeed, the integration of hardware and software and the services

element are key to the customer experience. Trial Tr. 3845:16–19 (Cook) (“[W]e have a maniacal focus on the user, in doing the right thing by the customer. We integrate hardware, software, and services, and we think that we do that better than anyone else.”); *see also* Trial Tr. 2723:21–25 (Schiller); Trial Tr. 3852:12–20 (Cook).

533. Part and parcel of Apple’s walled garden approach is its robust app review process.

533.1 Apple reviews each and every app to ensure that they operate as described and don’t contain obvious bugs or other problems. *See* § VI.D. Apple also reviews entitlements requested by apps to determine whether they are reasonable and appropriate for the stated purpose of such apps. Trial Tr. 1102:9–24 (Kosmynka). Such review, particularly human review used by Apple, is an important mechanism for improving and maintaining reliability and safety. Ex. Expert 11 ¶ 39 (Rubin). Apple’s App Store review process benefits from over a decade of improvements and innovations in response to the discovery and evolution of new safety threats. Ex. Expert 11 ¶ 42 (Rubin).

533.2 Dr. Mickens cherry-picks data to distort the efficacy of Apple’s App Review. Dr. Mickens did not compare the number of reported bad apps to the total number of apps reviewed by Apple, claiming that data was not “relevant” to his opinions. Trial Tr. 2635:8–13 (Mickens). And while Epic has similarly pointed to anecdotal complaints from developers, *see* Trial Tr. 1561:12–1562:2 (Evans), Mr. Grant conceded that Apple’s hardware support was at least on par with other platforms, Apple is “very comparable” to other platforms in “discovering defects and problem[s],” and “Apple’s engineers are great,” “knowledgeable, skilled” and “really motivated to make sure the developer is having a great experience.” Trial Tr. 733:10–14 (Grant). Moreover, it is not unusual to receive complaints; all businesses receive complaints. Trial Tr. 1255:2–7 (Allison) (Q. Sir, this is, I think, the point on which we can agree. While there are people who love your business, there are also people who criticize your business; correct? A. I think that’s true of all businesses.”).

533.3 Users value Apple devices because everything “just works.” Trial Tr. 3933:1–6 (Cook).

533.4 Dr. Mickens does not dispute that curation provides additional layers through which security and privacy can be protected. Ex. Expert 11 ¶ 91 (Rubin).

533.5 If Apple approves and distributes low-quality apps, it will suffer a loss of goodwill—detracting from its attractiveness to consumers and, by virtue of indirect network effects, developers too. *See* Apple Ex. Depo. 10 at 109:1–110:7 (Shoemaker); Ex. Expert 11 ¶ 91 (Rubin).

533.6 The success of the app review process has led other transaction platforms to adopt Apple’s practices and increase the robustness of their review processes. DX-3393.001 (“The App Store is better for so many reasons, but Google is clearly seeing the fact that people trust our store more. And when you trust a store, you’re

more likely to spend money there. If Google really starts reviewing apps, there's a likelihood that people will start trusting that store.").

534. Many other game transaction platforms also have walled gardens or are otherwise heavily restricted.

534.1 Sony, Nintendo and Microsoft all operate similar walled gardens or closed platform models as Apple, whereby the hardware, operating system, digital marketplace, and payment systems are integrated and exclusive to the platform owner. Trial Tr. 180:17–84:9 (Sweeney); Trial Tr. 547:11–14 (Wright) (noting that the Xbox Store is “part of the integrated experience” offered by the Xbox console), Trial Tr. 619:15–620:2 (Wright) (stating that Xbox does not allow direct downloads and that “it’s a closed ecosystem for a gaming device”). Ms. Wright testified that she does “not think it’s unfair” for Xbox to operate a walled garden business model. Trial Tr. 621:1–2 (Wright).

534.2 Microsoft, Sony, and Nintendo all have application review processes and moderate the app content. Apple Ex. Depo. 2 at 60:18–61:11; 83:17–22; 91:8–19 (Kreiner).

534.3 Several other platforms also prohibit competing stores-within-stores. Prior to April 22, 2021 (less than two weeks before trial), the Epic Game Store had no competitive stores within it. Trial Tr. 264:1–4, 265:1–2 (Sweeney). Google Play, Steam, and Samsung also prohibit apps from having a store-within-a-store. Google asserts very clearly that it is a closed platform, and that the Google Play store is to be the sole means through which Google Play developers can sell their games, virtual goods, or services. DX-3298.004–.006. So does Samsung, which also reserves the right to review all apps and require a cessation of distribution [REDACTED]. DX-4922.001; DX-3472.004, .020 (§§ 3.4, 9.11 & Ex. A). Even today, “third-party app stores are still rife with Trojanized applications.” DX-4975.007.

534.4 Game platforms such as Xbox Live and PlayStation also have extensive rules governing how user data can be used by developers. DX-3437.005; DX-3293.015–.017.

535. Despite these rules, other platforms’ review processes are inferior to Apple’s. Ex. Expert 11 ¶¶ 54–55 (Rubin). The Google Play review process is not as stringent or comprehensive as Apple’s review process. *Id.*

536. Security lapses on other platforms underscore the benefits of Apple’s approach. [REDACTED]

[REDACTED] DX-4909.027.

D. Apple has not refused to deal with Epic

537. Dr. Evans asserts that Apple conditionally refused to deal with Epic by requiring Epic to use the App Store exclusively if it wanted to distribute its apps on the App Store at all. Ex.

Expert 1 ¶ 166(v); *see also* Trial Tr. 1687:8–1688:24 (Evans) (agreeing “the only two competitive paths open to Apple were to license developers to use iOS to compete with the App Store when 2010 rolled around or never to license to developers at all”). This purported “condition” is substantively no different from Apple’s refusal to deal with third party app stores, sideloaded apps, and third party payment solutions, all of which Apple’s contractual rules and technical design prohibit and block. Trial Tr. 1806:24–1807:16 (Athey). *But see* Trial Tr. 1808:21–1809:7 (Athey) (Dr. Athey conceding that she did not “provide a full analysis of the code”). But Apple has no duty to deal with Epic at all, and certainly has no duty to deal with Epic on its preferred terms.

538. Contrary to Epic’s claims, Apple was clear that it would resume business with Epic if Epic agreed to comply with the terms of the DPLA and the App Guidelines that apply to all developers seeking to use Apple’s intellectual property to create and distribute iOS apps. *See* Trial Tr. 171:20–25 (Sweeney); *supra* § XI.N.

538.1 Dr. Evans has written and agrees that a firm’s right to use its property is essential for a free market economy, provides firms with the incentive to use property in its most efficient manner, and ultimately serves consumers who benefit from improvements in products and processes. Trial Tr. 2396:7–23 (Evans).

539. Apple has never licensed iOS to any third party for any use, including to develop a competing technology for iOS app distribution. Trial Tr. 2723:18–2724:5 (Schiller).

539.1 The practical effect of Dr. Evans’ and Dr. Athey’s theories, however, would require Apple not only to deal with third-party app stores, sideloaded apps, and third party payment solutions, but also would compel Apple to license (or give away) its intellectual property to those entities. Trial Tr. 1812:8–11 (Athey). Yet Dr. Evans agreed that “ordinarily, the owner of intellectual property should not be required to create competition in its own technology.” Trial Tr. 1689:12–15 (Evans).

540. As Dr. Evans concedes, Apple also has not sacrificed short-term benefits in order to obtain higher profits in the long run from the exclusion of competition. Trial Tr. 1686:13–17 (Evans). Rather, Apple had rational—and procompetitive—reasons to refuse to permit *Fortnite*’s distribution on the App Store in a manner that flagrantly violated the terms of the licensing agreement and the App Review Guidelines. *See* Trial Tr. 3917:12–25 (Cook).

540.1 Apple terminated Epic’s Developer Agreement and DPLA only after Epic flagrantly breached the parties’ contractual agreements. *See* Dkt. 428 ¶ 34; *see also supra* §§ XI.K–XI.N.

E. Epic has abandoned its essential facility claim, which is factually unsupported in any event

541. First, Epic has not alleged or demonstrated that it is a competitor of Apple’s in the field of the facility itself—“iOS”—or in a vertically related market that is controlled by the facility. Dkt. 1 ¶ 197. Epic does not compete with Apple because it does not offer a mobile operating system. *See supra* § XI.A (describing Epic’s business model); Trial Tr. 1492:8–

9 (Evans) (Dr. Evans asserted that the alleged operating systems market defined by Epic is “a duopoly” with “two choices: iOS and Android”).

542. Second, iOS is not essential to Epic’s survival and is relatively insignificant to Epic’s ability to reach consumers.

542.1 As described above, *Fortnite* and Epic’s other offerings were available through a number of game apps transaction platforms. *Fortnite* was available through other game app transaction platforms before Epic started distributing it on the App Store, Ex. Expert 6 ¶¶ 35, 38, 44 (Hitt), and it continues to be available on other platforms even after being pulled from the App Store, Trial Tr. 133:5–7 (Sweeney). *Fortnite* will soon be available to iOS users through Nvidia GeForce Now, which was recently being tested and is expected to launch this year. Trial Tr. 137:10–16, 176:24–77:8 (Sweeney); 476:20–477:12 (Patel). And consumers can continue to make *Fortnite* transactions through the iPhone browser. *See supra* § XIV.A.

542.2 Most consumers can make *Fortnite* transactions on a non-iOS device. Ex. Expert 6 ¶¶ 52–53, 62 (Hitt). Epic’s “Free *Fortnite*” demonstrates that *Fortnite* users can and do switch platforms—Epic retained over 80% of iOS *Fortnite* users’ pre-hotfix revenue (across all platforms) in the four-month post-hotfix period. Ex. Expert 6 ¶¶ 97, 99 & fig. 20 (Hitt).

542.3 The vast majority of *Fortnite* revenue comes from sources other than iOS. *See supra* § XIV.B.

543. Indeed, Epic’s economist, Dr. Evans, has *twice* declined to express any opinion related to an essential facilities claim. Trial Tr. 1673:4–11, 2390:16–2391:2 (Evans); *see also generally* Ex. Expert 1 § II (Evans). And he testified that he would not describe iOS or Android as utilities. Trial Tr. 2381:21–2383:18 (Evans).

544. The evidence described above with respect to Epic’s refusal to deal allegations demonstrates that Apple has not refused to provide Epic with access to the claimed essential facility. *See supra* § XIX.D.

XX. Apple’s Conduct Did Not Have An Anticompetitive Effect

A. The opening of the iPhone platform to third-party developers was procompetitive

545. With the introduction of the iPhone, Apple offered consumers a revolutionary new device with a new operating system—premised on security, reliability, and privacy. *See supra* §§ III–IV. Consistent with those principles, the iPhone’s operating system, iOS, did not permit sideloading, which Apple determined created unacceptable vulnerabilities on the iPhone. *See supra* § III.B. But users could access native apps developed by Apple as well as web applications (through a web browser, like Safari). *See supra* § III.B.

546. Apple’s original view was that it would not allow third-party apps to be downloaded onto the iPhone. *See supra* § III.B. With the introduction of the App Store, however, Apple

created an entirely new transactional platform—a new option for digital game transactions. *See supra* §§ III.A & III.C.

547. Licensing substantial amounts of intellectual property, Apple created a new platform that developers could use to create game apps for consumers. *See supra* § III. Likewise, the App Store created a new, easy-to-use platform that iOS users could use to download games—often for free. *See supra* §§ III & VII.C.
548. Critically, the App Store’s introduction did not eliminate or restrict any then-existing distribution channels. *See supra* § VI. As Steve Jobs emphasized at the launch of the iOS SDK: “Web applications are still fully supported, so any Web application can continue to be built, which we are improving upon as well.” PX-0880.027; *see also supra* § IX.

B. The success of the App Store business model has benefitted consumers

549. The App Store provides an easy, seamless process for consumers to find and download apps. *See supra* § VII.B.
550. In doing so, the App Store also provides consumers with free access to a huge library of safe, secure apps, across twenty-six different categories—including thousands of game apps—that enhance their lives. Ex. Expert 8 ¶¶ 24, 46 (Schmalensee); DX-5552.002–03. From the start, many of these game apps were free. Trial Tr. 2741:9–14, 2767:8–12 (Schiller); *see also supra* § III.E.
551. The App Store’s pricing structures have continued to encourage free apps. Ex. Expert 8 ¶ 51 (Schmalensee). Accordingly, the number of free apps that consumers can download from the App Store has significantly increased over time. Trial Tr. 2094:13–23 (Hitt); Ex. Expert 6 ¶ 169 & fig. 38 (Hitt). Today, 83% of apps with at least one download on the App Store are free to consumers, including 76% of game apps. Trial Tr. 2094:13–23 (Hitt); Ex. Expert 6 ¶ 169 (Hitt).
552. In particular, the availability of these free apps provides enormous benefits to consumers. Ex. Expert 8 ¶¶ 81, 130 (Schmalensee). Most obviously, consumers are able to access and choose between a broad variety of apps—from games to health to business productivity—at no cost. Ex. Expert 8 ¶ 105 (Schmalensee). Even among game apps, they are able to choose among a variety of options in each game genre. Trial Tr. 2134:7–21 (Hitt) (“ . . . But it’s also possible to move across games, and that makes it - - makes these platforms potentially substitutable, even if they are not playing exactly the same game, and there is many different variations of that. . . . others might simply substitute among other games: If I can’t pla[y] Fortnite, I’ll play something else. I will play PUPG or something else that is interesting to me.”); Ex. Expert 6 ¶ 270 (Hitt).
553. Whether or not they cost consumers anything, all apps on the App Store have benefitted from Apple’s vigorous review process and high security and privacy standards. Ex. Expert 8 ¶¶ 47, 52 (Schmalensee). Apple curates and ranks game apps, making it easier for consumers to find interesting content. Ex. Expert 8 ¶¶ 51–52 (Schmalensee).

554. Consumers also benefit from indirect network effects fostered by Apple. Ex. Expert 8 ¶¶ 51–52 (Schmalensee). By providing developers with an array of powerful tools to create high-quality apps for a nominal cost, Apple has increased the number and quality of apps available to consumers—including free apps. Ex. Expert 8 ¶ 51 (Schmalensee). This in turn creates a virtuous cycle of attracting more users and, in turn, more and better developers. Ex. Expert 8 ¶ 50 (Schmalensee).

C. The success of the App Store business model has benefitted developers

555. The App Store has also created tremendous opportunities for developers. Ex. Expert 8 ¶¶ 46, 49–50 (Schmalensee).
556. First, the App Store’s appeal to consumers has created an enormous audience of potential customers for developers. Ex. Expert 8 ¶¶ 50–51 (Schmalensee).
557. Apple attracts high-value consumers both directly (by continually adding new and better consumer-facing features to its devices and its App Store platform, *see supra* § VIII) and indirectly (by adding developer-facing features to its platform, which attract more and better developers, which in turn attract more and higher value consumers, *see* § VIII; Ex. Expert 7 ¶ 66 (Lafontaine); Ex. Expert 8 ¶ 50 (Schmalensee)).
558. Second, Apple’s IAP functionality facilitates simultaneous transactions, including the efficient collection of its commission. Trial Tr. 1884:1–1884:8 (Schmalensee) (“[IAP is] part of a larger system and . . . there are a lot of functions performed. But a key function and a function that’s critical to this case is it automatically and essentially frictionlessly collects the commission due Apple on transactions involving in-app purchases.”); Ex. Expert 8 ¶ 132 (Schmalensee). This provides more reliable exchanges between user and developer and also eliminates burdensome and unreliable self-reporting obligations on developers. Ex. Expert 8 ¶ 138 (Schmalensee).
559. Third, Apple’s intellectual property license, policies, and support to developers have had a democratizing effect. Trial Tr. 2737:9–24 (Schiller); *see also supra* § VII.B. Prior to the App Store, developers were typically large companies. Trial Tr. 2737:16–20 (Schiller). That changed with the App Store; the tools and services Apple made available allowed smaller game developers to compete unlike ever before. Trial Tr. 2737:9–24 (Schiller).
560. As discussed above, the robust slate of SDKs, APIs, and other development tools allows developers to make apps faster, easier, and cheaper. *See supra* § VIII. Those benefits are particularly valuable to small developers who lack the budgets to employ vast teams of programmers for long periods of time. Trial Tr. 2737:9–24 (Schiller).
561. From the start, Apple also provided ongoing marketing and editorial support to developers. Trial Tr. 934:10–935:4 (Fischer), Trial Tr. 925:18–925:14 (Fischer) (describing editorial team), Trial Tr. 925:15–926:6 (Fischer) (describing business management team for developers), Trial Tr. 926:7–927:4 (Fischer) (describing product team); Trial Tr. 2742:6–16 (Schiller); *see also supra* § III. These benefits are disproportionately valuable to small developers, most of which have little to no marketing budget. DX-3800.038. As Mr. Fischer testified: “I certainly think that what we do is incredibly unique. And I certainly

have not seen any marketplace that – that distributes apps or games, you know, do what we are doing in terms of providing marketing and editorial support like this to developers.” Trial Tr. 934:23–935:2 (Fischer).

562. Apple has continued to promote smaller developers, with the Small Business Program among the most recent examples. DX-4168; *see also supra* §VII.C.
563. Epic is an example of the massive growth and success developers can and have achieved by using the App Store and associated tools and services provided by Apple. Epic used a free distribution model with in-app purchases. DX-3691.008–.009. This business model is made possible by the App Store’s commitment to permitting (and, indeed, incentivizing) free-to-download apps, Ex. Expert 8 ¶ 51 (Schmalensee), and the introduction of IAP, *see supra* § III.F. And Apple’s services have significantly contributed to *Fortnite*’s rapid growth since 2017. DX-3233.010 (showing large numbers of new players in *Fortnite* between January and April 2019 driven by the iOS platform).
564. As a result, Epic has earned more than \$700 million through *Fortnite* transactions on iOS devices. Ex. Expert 6 ¶ 73 & fig. 14 (Hitt).
565. The average amount spent by U.S. consumers on digital game transactions grew by 448% between 2010 and 2018, with the App Store outstripping marketwide growth by leaps and bounds—from 2010 to 2018, developer revenue for digital game transactions on the App Store grew by more than 2,600%. Ex. Expert 6 ¶ 185 (Hitt). Meanwhile, in 2019, developers earned over \$400 billion in revenue from the sale of physical good transactions through the App Store. Trial Tr. 2769:7–13 (Schiller).

D. Prices are decreasing, not increasing

566. When Apple first allowed developers to sell native applications on the App Store, it adopted a 30% commission for paid downloads—a price consistent with the rate Steam had begun using a few years prior. Trial Tr. 1248:12–22 (Allison); *see also supra* § XVIII.D. As Epic’s expert conceded, this was not an supracompetitive price. *See* Trial Tr. 1685:11–1686:15 (Evans). Of course, many apps then—and since—were free and subject to no commission. *See supra* §§ VII & XVIII.A.
567. Apple has never increased its commission rate. Ex. Expert 6 ¶¶ 159–62 (Hitt); Trial Tr. 2740:8–15 (Schiller); *see also supra* § VII.C.
 - 567.1 Epic’s experts attempted to suggest that prices have gone up by pointing to an increase in the average dollar amount of Apple’s commission. Evans TT. But the average dollar amount of the commission has gone up because *developers*, not Apple, have increased prices for in-app purchases by over five times over the last ten years. DX-4806. “Developers are creating more value for consumers, and they’re able to charge more, and they’re earning more revenues as a result. Apple, of course, because its commission has been steady, also has been earning an increased commission on those transactions.” Trial Tr. 2110:9–2111:21 (Hitt). The developers who have increased prices include Epic, whose median prices for in-app purchases have doubled over seven years. DX-4757; Trial Tr. 2111:22–2112:7

(Hitt). The notion that Apple's prices have increased because developers charge more for their products is specious—Epic calculates its commission in the exact same way (as a percentage of the transaction), as does every competing platform. Dr. Evans admitted that he did not “study the level of the transaction prices for in-app purchases over time,” and that the increase in revenue is attributable to developers raising the price *they* charge over time without a corresponding “decreas[e]” by Apple. Trial Tr. 2399:15–2400:7, 2401:14–25 (Evans).

568. Nor has Apple's commission rate ever exceeded the standard industry rate. Ex. Expert 6 ¶ 159 (Hitt); Trial Tr. 2742:3–5, 2804:18–20 (Schiller); *see also supra* § XVIII.D.

568.1 Many other transaction platforms and storefronts—including not only Steam but also Google Play Store, Amazon Appstore, Galaxy Store, Microsoft Store, PlayStation Store, Nintendo eShop, among others—charge a 30% commission. Trial Tr. 2089:17–22 (Hitt); Ex. Expert 6 ¶ 162 & fig. 37 (Hitt). Apple uses the same commission structure on the Mac App Store. Trial Tr. 1685:23–1685:8 (Evans); Ex. Expert 1 ¶¶ 168(viii), 281 (Evans). Epic's chief economic expert opines that there is no reason to believe the Mac App Store price was supracompetitive. Trial Tr. 1686:9–12 (Evans).

568.1.1 These other platforms charge 30% regardless of whether they make a profit on associated hardware—for example, Steam does not offer hardware, but continues to charge a 30% commission. Trial Tr. 2092:4–22 (Hitt). Many other digital content platforms that offer no hardware also charge a 30% (or higher) commission. DX-3120.008 (Nook charges 35–60%, Twitch charges as much as 50% on subscription revenue, and Audible charges 60–75%).

568.2 Moreover, many Android markets in China—in which the relevant, comparable market is not monopolized—charge a 50% commission on game app transactions, with even the largest developer, Tencent, being able to negotiate no lower than a 30% commission. Trial Tr. 2430:1–15 (Evans); DX-3120.007.

568.3 To be sure, Epic has decided to charge a lower commission rate in the Epic Game Store, but that platform is a poor comparator to the App Store. *See supra* § XI.E. After all, EGS has never been profitable, provides developers with inferior services and a smaller customer base, delivers a less robust user experience compared to the App Store, and has been subject to significant security breaches. *See supra* § XI.E.

569. Moreover, Apple's commission has only decreased over time—in both actual and effective measures. Trial Tr. 2088:1–14 (Hitt); Ex. Expert 6 ¶¶ 159, 170, 173 (Hitt); *see also supra* § XVIII.A.

570. The actual commission rate has never increased beyond 30%, and Apple has exempted certain kinds of apps or transactions from paying any commission and reduced the rates for others, such as for subscriptions and apps made by small developers. Trial Tr. 2088:1–14 (Hitt); *see supra* § VII.C.

571. As a result of this and the increasing prevalence of free apps, Apple’s effective commission has steadily decreased over time to virtually zero today. Trial Tr. 2113:8–15 (Hitt); Ex. Expert 6 ¶ 269 (Hitt); *see also supra* § XVIII. The effective commission on game app transactions in the App Store has decreased similarly. *See supra* § XVIII.A; Trial Tr. 2096:18–2097A:1 (Hitt); Ex. Expert 6 ¶¶ 170, 173 (Hitt). This is far below, for example, Steam’s 26.8% effective commission rate, which Epic’s expert Dr. Evans opined was a competitive price. Ex. Expert 1 ¶ 177 (Evans).
- 571.1 Dr. Evans suggests in his written testimony that even under his own (faulty) analysis, a commission rate of 15.6% would be the competitive rate, *see* Ex. Expert 1 ¶ 183 (Evans), but nonetheless suggested at trial that Apple should institute a 6.8% commission rate (i.e., less than *half* the alleged competitive rate) to maintain the \$1 billion revenue policy supposedly suggested by Mr. Schiller in 2011, Trial Tr. 1555:15–1556:15 (Evans).
572. In addition, the value derived from the App Store is commensurate to the amount paid by developers. As Epic recognized, Apple’s commission is not a payment processing fee. Trial Tr. 1271:7–1272:4 (Allison). Rather, it is a price when developers agree to pay to use an app store’s platform, license its intellectual property, access its user base. *Id.* On the App Store in particular, developers also benefit from IAP and other integrated features of iOS. Trial Tr. 956:18–957:5 (Fischer). The commission therefore derives from, and is consistent with, the value developers can and do receive from Apple and provides Apple a return on its investment in R&D. Trial Tr. 2742:3–2743:2 (Schiller); 3863:14–3864:5 (Cook).
573. Indeed, the tools and services offered by Apple surpass those offered by many other platforms that charge a 30% commission. *See supra* § VIII. As discussed above, Apple has continued to innovate in each part of its ecosystem—software, hardware, and services (as well as the integrations between them)—to improve game app transactions on the App Store. Ex. Expert 12 ¶ 52 (Malackowski); DX-5335; *see also supra* § VIII.
574. At bottom, Apple’s business model has resulted in lower game app transaction prices but increasing app transactions, a variety of high-quality apps, and greater revenue for developers—procompetitive benefits for every market participant. Ex. Expert 6 ¶¶ 267, 269–70 & fig. 55 (Hitt).

E. Output is increasing, not decreasing

575. As discussed above, the total number of digital game transactions on the App Store has increased. Trial Tr. 2081:10–2082:5 (Hitt); Ex. Expert 6 ¶ 183 (Hitt); *see also supra* § XVIII.C. Developers’ total annual game revenue on the App Store also has increased—by 2,600% from 2010 to 2018. Trial Tr. 2081:18–2082:5 (Hitt); Ex. Expert 6 ¶ 185 (Hitt). This outpaced by a factor of six the broader digital game transaction market, which grew by 448% during the same time frame. Trial Tr. 2083:8–18 (Hitt); *see supra* § XVIII.C.
- 575.1 Even under Epic’s erroneous “iOS App Distribution Market,” output has been “expanding rapidly,” with “500 percent growth in transactions in all app

transactions and 3700 percent [growth] in revenue” from 2010 to 2018. Trial Tr. 2083:19–2084:8 (Hitt).

576. The number of game app developers that develop apps for the App Store also has dramatically increased. *See supra* § IX.A. The App Store’s user base has grown dramatically. *See supra* § IX.A. The number of game apps available on the App Store has dramatically increased. *See supra* § IX.B. And sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. *See supra* § IX.C.
577. In addition to this quantitative increase in output, the quality of game apps available on the App Store has increased, with iOS now able to download and play high-end “AAA” games from the App Store. *See supra* § IX.D. Indeed, iOS users spend more on their game apps—a barometer for the quality of those apps—than other mobile users. *See supra* § IX.D.

F. The App Store provides a trusted platform for transactions

578. Security and privacy are key commitments at Apple. Trial Tr. 3423:16–19 (Federighi) (“protect[ing] the security and the privacy of iOS device users” is “completely central to what we do”); Trial Tr. 2860:13–22, 3163:15–20 (Schiller); Trial Tr. 3845:22–3846:2 (Cook); *see also* Trial Tr. 302:19–303:16 (Sweeney) (recognizing that customer data security and privacy are “fundamental differentiators” and “a significant competitive advantage” for Apple as compared to Android). Thus, Apple has focused on creating an ecosystem where users can trust the content that Apple publishes, making consumer safety the first order of concern. Trial Tr. 1076:14–1077:3; 1085:1–12 (Kosmynka); Trial Tr. 3925:21–24 (Cook). Within Apple, it is well known that the purpose of the App Store is to be a safe and trusted place to get apps. Trial Tr. 1076:14–1077:3; 1085:1–12; 1183:12–1184:6 (Kosmynka) (an app store without app review, like itch.io, would be a “free-for-all”; “We want to make sure that the App Store is a great place for customers to find safe and trusted apps and a great opportunity for all developers.”); Trial Tr. 3421:19–23 (Federighi) (users have trust and confidence in the App Store as “a trusted source of apps”).
- 578.1 While counsel for Epic cross examined Mr. Schiller regarding data collected by Apple from users, this data is gathered so that the App Store can execute its basic functions, Trial Tr. 3162:17–3163:14 (Schiller), and then stored pursuant to “very strict guidelines at Apple internally about that protection of that data, security of that data, isolation of that only to that service,” Trial Tr. 3163:15–20 (Schiller). Apple does not use personal information to track users, does not sell data, and does not share data with brokers. Trial Tr. 3079:6–10, 3164:4–3166:15 (Schiller).
579. While the security benefits to consumers are obvious, the safety and security afforded consumers by this process also benefits developers. Trial Tr. 1085:19–1087:4; 1124:7–15 (Kosmynka). That is because such a record of safety and security attracts more users and increases their willingness to download (and pay money for and on) apps, which in turn increases developer revenue. Ex. Expert 8 ¶ 52 (Schmalensee). Epic itself recognizes the importance of ensuring that consumers only download software from safe and trusted sources. Trial Tr. 1240:12–1241:1 (Allison).

580. The safety, security, privacy, and usability delivered by the App Store—including as a result of its policies and rules—provides consumers a valuable, differentiated option from Android platforms. Trial Tr. 1823:2–9 (Athey) (agreeing that “privacy and security are competitive differentiators for Apple). This drives competition between iOS and Android platforms.

XXI. The App Store Business Model Is Butressed By Overwhelming Procompetitive Justifications

A. Apple’s conduct is grounded in its legitimate interest in prioritizing user experience

581. The very foundation of the App Store is that consumers can trust that they can safely and easily download high quality apps for their iPhones that perform as promised, work on their specific devices do not jeopardize the safety, stability, or reliability of their devices, and offer the privacy protections that consumers have come to expect from Apple. Trial Tr. 2734:21–2735:2 (Schiller).
582. Apple’s iOS ecosystem is designed around these principles. *See supra* §§ II–IV. Apple’s walled garden—with rigorous app review and extensive guidelines and screening procedures—ensures users receive a high-quality experience. Ex. Expert 11 ¶ 59 (Rubin). Mr. Sweeney demands that Apple permit sideloaded apps and third party app stores within the App Store with apps not reviewed by Apple, at the same time he testified as to the legitimate justifications for Apple’s app review: “I’m a supporter of Apple’s freedom to review apps.” Trial Tr. 93:8–11 (Sweeney).
583. Apple is the operating system *and* device manufacturer. Trial Tr. 3890:23–3891:12 (Cook). The contractual and technical restrictions at issue were intended to protect the functionality of the device. *See supra* §§ IV & VI.
584. Epic’s economist, Dr. Evans, concedes that Apple has established a reputation for the high quality of its products. Trial Tr. 1689:16–18 (Evans); *see also* Trial Tr. 2700:10 (Mickens) (Epic’s security expert testifying that “Apple does have a reputation for security”). And iOS consistently scores higher than Android on metrics of user satisfaction and perceived platform quality. Ex. Expert 11 ¶ 49 (Rubin).
585. The curation processes enabled by the “contractual” and “technical restraints” Epic challenges in this case are critical to ensuring low-quality or malicious apps stay out of the App Store and the best apps rise to the top. The immediate goal of the App Store Review Guidelines is to provide quality assurance and ensure that users have a good experience with any apps they download from the Store. *Supra* § VI.D. And as described above, Apple’s high standards and robust review process routinely identify and reject apps that are malicious, offensive, impermissibly intrusive, or otherwise low quality. *See supra* § VI.D. Dr. Evans agreed that “[p]rotecting iPhone users from security threats is a procompetitive benefit.” Trial Tr. 1689:22–24 (Evans). And he also agreed to screening “whether an app would be offensive to consumers is another interest served by the App Store Review Guidelines.” Trial Tr. 2415:10–13 (Evans).

586. These processes—developed through considerable investment and experience—are not easily replicated, as the experiences of other platforms show. *See supra* § VI.E. By excluding apps that fail the app-review process and not allowing sideloading from third-party sources, Apple ensures that in almost every instance users will be exposed only to high quality apps. *Supra* § VI.
587. This instills trust: iOS users know that when they transact on the App Store, they are using a reliable and secure platform and will receive a product that has been vetted to meet Apple’s high standards. Ex. Expert 8 ¶ 52 (Schmalensee) This consumer confidence in turn enriches the App Store ecosystem (and developers) as they are more prone to download, use, and pay for developers’ apps. *Id.*
588. These benefits are enjoyed system-wide by users and developers. But by the same token, a developer that circumvents app review or otherwise evades Apple’s guidelines, as Epic did, threatens to give users a negative impression of the entire App Store. Ex. Expert ¶¶ 52–53 (Schmalensee). Such a negative impression harms not just Apple but also all developers that offer apps on the App Store. *Id.*
589. For similar reasons, the challenged “contractual” and “technical restraints” are key to maintaining Apple’s commitment to security, safety, and privacy. *See supra* § IV. Mobile phones play a unique role in consumers’ lives: Their convenience has led users to store more of their private information on them, and users rely on their devices’ functionality. Trial Tr. 2723:8–16 (Schiller); Ex. Expert 11 ¶ 23 (Rubin). As Epic’s expert admitted, Apple has been a vocal advocate for consumer privacy, and the company’s commitment to consumer privacy differentiates Apple from many other large technology companies. Trial Tr. 1689:25–1690:8 (Evans).
590. Indeed, Epic itself has recognized that consumers expect and value safety and protection from malware and privacy breaches or other exploits. Trial Tr. 193:3–9 (Sweeney) (“Q. Because privacy is important to you. A. Yes. Q. And you don't want to do anything that will put your users’ privacy in peril; correct? A. Yes. Q. That is a personal concern of yours? A. Yes.”); Trial Tr. 759:13–761:5 (Grant) (noting that Epic has a team of people “securing the game” in attempts to identify and close “vulnerabilities,” because “if the integrity of the game begins to fall apart, . . . people are going to be less inclined to play that game”). [REDACTED] . DX-3465.024.
591. Accordingly, Apple has made security and privacy an even bigger focus of the iPhone, iOS, and the App Store. Trial Tr. 2723:2–16 (Schiller). This begins with Apple’s creation of high-quality devices, like the iPhone, that contain built-in privacy features and software. Trial Tr. 3399:8–3400:1 (Federighi). But Apple also built from the ground up—and continues to improve—a mobile-tailored operating system in iOS, to ensure safety and reliability. Trial Tr. 2721:18–2723:16 (Schiller). And the App Store is designed to further safeguard users’ privacy and security. Trial Tr. 2830:25–2831:3 (Schiller).

592. Malicious activity on jailbroken phones illustrates the risks that can be posed by increased access to third-party app distribution. Ex. Expert 11 ¶ 76 (Rubin). There are many documented cases of malware being distributed on jailbroken iPhones. *Id.*
593. Thanks in significant part to Apple's restrictions and review process, Professor Rubin found iOS security to be generally superior to that of non-iOS platforms, such as Android. Ex. Expert 11 ¶¶ 56–57 (Rubin). [REDACTED] Ex. Expert 11 ¶ 57 (Rubin). In fact, Professor Rubin identified multiple examples of malicious apps found on the Google Play Store that likely would have been rejected in the App Store review process. Ex. Expert 11 ¶¶ 57–58 (Rubin).
594. Apple's focus on security is no mere pretext—its security processes and features have made iOS significantly safer than the Android mobile platform. *See supra* § VI; Ex. Expert 11 ¶ 59 (Rubin). Professor Rubin found, for instance, that Apple's mandatory-verification procedures for developers is a very important security deterrent to prevent fraud and to hinder arbitrary distribution of malicious or inappropriate content. *Id.* He also found that iOS's ban on the installation of unsigned, untrusted apps enhanced iOS security relative to Android. Ex. Expert 11 ¶ 56 (Rubin).
595. Indeed, Mr. Sweeney himself is an iPhone user that finds Apple's approach to privacy to be superior to Google's. Trial Tr. 302:2–303:4 (Sweeney). And other systems like Switch, PlayStation, and Xbox also have adopted “closed platforms” as Nintendo, Sony, and Microsoft do not allow users to install software on their consoles outside of the platform's official store. Trial Tr. 180: 17–84:9 (Sweeney); Trial Tr. 554:10–16 (Wright). Similarly, the Epic Games Store, Samsung, Microsoft (including Xbox), and Google Play all have application review processes and moderate the app content. Ex. Expert 8 ¶ 74 (Schmalensee); *see also* Trial Tr. 547:6–7 (Wright) (“The Xbox Store is a curate[d] store for the Xbox console.”).

B. The challenged contractual provisions prevent free-riding on Apple's procompetitive investments and intellectual property

596. To the extent that the license terms actually restrain a developer from using Apple's IP to distribute outside the App Store, those terms serve the valid purpose of preventing free-riding on Apple's IP and allowing Apple to earn a return on its IP. Ex. Expert ¶ 42 (Malackowski). Developers who distribute apps through the App Store must first agree to Apple's DPLA, which includes a percentage commission payable to Apple for certain transactions and places limits on what they can do with Apple's intellectual property. *See supra* § VI.B.
597. The restraints at issue serve many purposes, including the prevention of free-riding, Ex. Expert 12 ¶¶ 15, 42 (Malackowski), which economists and courts widely recognize as a procompetitive justification for a vertical restraint that prevents free-riding. In particular, Apple's policies that all native iOS apps written using Apple-licensed software and tools be available only through the App Store prevent free-riding on: (1) Apple's innovation and

investments, and (2) other developers that create safe, secure, high quality apps and otherwise conform with developers' responsibilities under the App Store policies and rules.

597.1 Apple created, continually improves, and maintains its iOS devices, its tools for the iOS platform, the iOS operating system, and the App Store (along with its policies and rules). In the 2020 fiscal year alone, Apple spent \$18.8 billion on research and development. DX-4581.026. Apple is entitled to a return on its enormous investment and is not required to allow others to benefit from its innovation for free. Ex. Expert 12 ¶ 18 (Malackowski). Indeed, the promise of return on investment is a major incentive for inventors to invest in costly research and development. Ex. Expert 12 ¶ 16 (Malackowski).

597.2 Unlike its competitors, Apple does not license its IP to OEMs and is permitted to recover a return on its IP in part through the design and sale of its own devices and services, including the App Store. Ex. Expert 12 ¶ 19 (Malackowski).

C. The licensing terms in Apple's DPLA are an integral part of a procompetitive intellectual property licensing arrangement

598. When innovators introduce new products—especially entirely new devices or platforms like the iPhone and App Store—it is appropriate for them to make design decisions that they think best for the success of the new device or platform. Ex. Expert 12 ¶¶ 15, 17, 19 (Malackowski)

599. By virtue of its ownership of crucial intellectual property, Apple could choose to be the exclusive developer of iOS apps for the iOS ecosystem. Ex. Expert 12 ¶ 18 (Malackowski). Ordinarily, the owner of intellectual property is not required to “create competition in its own technology.” Trial Tr. 1689:12–15 (Evans).

600. [OMITTED]

601. Thus, the licensing terms in Apple's DPLA are an integral part of a procompetitive intellectual property licensing arrangement. Ex. Expert 12 ¶ 42 (Malackowski). By choosing to license its intellectual property to third-party developers, Apple creates an integration that can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Ex. Expert 12 ¶ 26 (Malackowski).

602. The challenged licensing terms do not restrain any competition that would occur in the absence of the DPLA. Ex. Expert 12 ¶¶ 51, 54 (Malackowski).

XXII. Epic's Proffered Alternatives For iOS App Distribution Would Undermine Apple's Business Model

603. Epic seeks an order preventing Apple from (among other things) “[r]estricting, prohibiting, impeding or deterring users of iOS devices, through technical, contractual, financial, or other means, from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store.” Dkt. 276-1 at 3. Epic also

seeks to “[e]njoin Apple from restricting, prohibiting, impeding or deterring the use of in-app payment processors other than Apple’s In-App Purchase.” *Id.* at 6.

604. Epic has not offered any evidence that these are less restrictive alternatives that would allow Apple to achieve its legitimate business goals. In fact, Mr. Sweeney testified that he had no knowledge as to how Epic’s proposed relief would affect food apps, map apps, coupon apps, weather apps, dating apps, instant messaging apps, or any of the countless developers that design such apps. Trial Tr. 345:19–346:16 (Sweeney).

A. Epic’s proffered “solutions” are premised on the counterfactual that Apple will provide free access to its intellectual property

605. As discussed above, Apple has protected its innovations by obtaining patents, trademarks and copyrights, as well as maintaining trade secrets. *See* § V. Apple holds over a thousand patents—as well as copyrights, trademarks, and trade secrets—in its iOS ecosystem, including technology in and relating to iOS, its App Store, and app developer tools. Ex. Expert 12 ¶ 23 (Malackowski). This includes Apple’s iOS features and functionality as well as its SDKs, APIs, and other development tools. *Id.*

606. As Mr. Malackowski testified, Epic’s proposed remedies “effectively ask for a compulsory or de facto compulsory license without compensation to Apple and that . . . would have impairment to innovation.” Trial Tr. 3643:10–17 (Malackowski). “Essentially, the requested relief would allow Epic Games to freeride on the investment in intellectual property of Apple.” Trial Tr. 3645:3–6 (Malackowski). Compelled licensing of Apple’s IP on Epic’s preferred terms and conditions would not serve the procompetitive purposes of the DPLA, would significantly increase Apple’s costs, and would chill Apple’s incentives to invest and innovate in its IP. Ex. Expert 12 ¶¶ 61–71 (Malackowski).

606.1 The compulsory license sought here is particularly problematic, because Apple “would be compelled to continue to support Epic Games, for example, in its store not only today, but into the future.” Trial Tr. 3644:1–16 (Malackowski). Such a scheme “breaks down that fundamental constitutionally-protected benefit of your innovation,” and “means it’s no longer possible to predict what return you’ll get on your innovation and it’s no longer, therefore, in many cases, likely justified to invest in that innovation.” Trial Tr. 3644:17–23 (Malackowski).

B. Epic’s proposed relief would compromise the security of the iOS platform

607. As discussed above, Apple has innovated relentlessly—and invested enormous resources—to ensure its ecosystem is the most secure in the industry. *See* §§ IV & VIII. Epic’s proposed “solutions” would not maintain the same degree of security within the iOS ecosystem.

608. First, third-party app distribution through alternative stores or sideloading would undermine Apple’s app review process by preventing it from applying its rigorous curation standards. Trial Tr. 1511:17–19 (Evans) (noting that, “when there aren’t any restraints,” developers “commonly make apps available on, for example, their websites and then

distribute those apps directly to consumers”); Trial Tr. 3884:19–3886:1 (Cook) (“We could no longer make the promise” of safety, security, and privacy); Ex. Expert 11 (Rubin).

609. As explained above, the App Store’s review process contributes significantly to iOS apps’ safety, reliability, and quality. *See supra* § VI.E.
610. Without Apple’s app review process, apps would not be vetted through Apple’s industry-leading review process. *See supra* § VI. This would naturally harm the user experience: Users would be more likely to encounter malware, offensive or inappropriate material, and otherwise low-quality apps. Ex. Expert 11 ¶ 74 (Rubin). Moreover, Apple would not necessarily manage the entitlements provided to apps, which could create additional risks. For example, if apps are distributed through alternative stores or sideloading, they may be granted elevated privileges that permit them to bypass certain on-device security or otherwise obtain access to software and hardware on the iPhone such as the microphone or camera. Ex. Expert 11 ¶ 112 (Rubin).
611. This is not a hypothetical concern: Third-party app stores host **99.9%** of discovered mobile malware. Ex. Expert 11 ¶ 78 (Rubin); *see also* DX-4401.003–.004; DX-4934.008.
612. The existence of third-party app distribution also would denigrate the overall effectiveness of Apple’s app review process. Ex. Expert 11 ¶ 34 (Rubin). As discussed above, both the machine and manual review used by Apple is informed from the decisions Apple has made with respect to tens of millions of apps in the past. Ex. Expert 11 ¶ 91 (Rubin); *see also supra* § VI.D. Because Apple would have no visibility into apps from other app stores, important information like red flags, trends, new malware, and other information from the review of these apps would not make it into Apple’s databases, thereby effectively rendering app review less useful over time. Ex. Expert 11 ¶ 92 (Rubin); *see also* DX-3140.001 (observing several security measures that only Apple can provide).
613. By the same token, it would be difficult for other app stores—which did not consider apps distributed through the App Store—to generate a similar catalog of review decisions to that of Apple. Ex. Expert 11 ¶¶ 92–93 (Rubin). Allowing multiple app stores therefore would make review decisions at each store less informed and less effective. Trial Tr. 3502:22–3503:15 (Federighi) (“If you were to take the kind of human review process that goes into the App Store and submit it at the kind of volume, the multiplier, that we see on the notarization service, the human cost would be tremendous and we wouldn’t be able to achieve the kinds of latencies that macOS developers, for instance, expect from the notarization service.”); Trial Tr. 3736:24–3738:6, 3745:2–3 (Rubin); Ex. Expert 11 ¶ 93 (Rubin). Even if some third-party stores provided robust protection, “the weakest link is really the problem.” Trial Tr. 3741:12–25 (Rubin).
614. Reducing the quality of screening procedures would not only risk users’ safety but also erode their trust of the iOS platform. Ex. Expert 11 ¶ 93 (Rubin). And if iOS users lost trust in the platform, they may refuse to download software updates or take other risk-preventative measures recommended by Apple—exacerbating security vulnerabilities. Ex. Expert 11 ¶ 90 (Rubin). The irregular updating, or failure to update, an operating system is known as “fragmentation.” Trial Tr. 3776:10–19 (Rubin). Android has a more

fragmented operating system than Apple, which makes Android devices more attractive targets for malware. Trial Tr. 3776:20–25 (Rubin).

615. Even if it were technically possible to replicate every step in Apple’s app review process, there is no indication that other third-party app stores could or would do so. Ex. Expert 11 ¶ 118 (Rubin).
616. Some third-party app stores could have nefarious incentives, such as to distribute malware to iOS devices. Ex. Expert 11 ¶ 87 (Rubin).
617. Even for well-intentioned third-party app stores, replicating Apple’s app review requires extensive commitment with financial support, intelligence, manpower, and time. Ex. Expert 11 ¶ 83 (Rubin).
618. Many third-party app stores simply lack the resources or incentives to conduct the same level of review and analysis as Apple. Ex. Expert 11 ¶ 83 (Rubin); *see also* DX-3194.001 (observing that a store-within-a-store represents “the worst of the worst” type of threat to Apple’s ecosystem). Others do not have the same standards for privacy and may have economic incentives to affirmatively lower the level of review. *See* Ex. Expert 11 ¶ 84 (Rubin).
619. In either scenario, third parties have a direct interest in maximizing the revenue from their app store, even if (as is likely to happen) users blame Apple for any security breach as a result of the third-party app store’s lackluster review process. Ex. Expert 11 ¶ 93 (Rubin).
620. Epic itself provides an example: In an effort to bypass Apple’s commission and more conveniently distribute its apps, it considered disregarding Apple’s Enterprise certificate policies to attempt to skip past the App Store review process. Ex. Expert 11 ¶ 67 (Rubin). It did so despite knowing that Apple prohibited using an Enterprise account for external distribution, and that certain malware in the past has been able to bypass app review. *Id.*
621. Nor was this an isolated issue. For example, there was a series of leaks in the binaries for the *Fortnite* installer after Epic launched it on Android devices via sideloading in August 2018, which led to malware and fraud. DX-4249.002; Trial Tr. 2644:24–2645:16 (Mickens). Even programmers within Epic raised alarms about Android leaks attributable to sideloading. DX-4304.002.
 - 621.1 Even more concerning is that when asked whether he was aware of “whether Epic has ever had issues with improperly using or collecting personal information about children under the age of 13,” Mr. Ko first testified that he could not recall, and then testified that he was “part of the – part of the attorney privileged team that are handling requests from FTC.” Trial Tr. 821:17–822:3 (Ko).
622. A second example is the contrast between the App Store and another app store, GOG, which operates on PCs and has a business model of restoring old, unworkable, or unoptimized games. Ex. Expert 11 ¶ 84 (Rubin). Because GOG’s purpose is to make unworkable games work again, not to provide secure apps, it likely prioritizes security less than the App Store, which makes security a primary focus and whose business model is to

check that working apps properly function in ways they are represented to users. Ex. Expert 11 ¶ 82 (Rubin). Thus, one consequence of third-party app stores not sharing Apple's resources or incentives for a stringent app review process is that users will be afforded fewer security features and be exposed to more malicious or offensive software. *Id.*

623. If Apple were prohibited from creating and enforcing policies that have the “effect of impeding or deterring competition among app distributors,” Apple could be constricted in what steps it can take to provide security measures or otherwise ensure that app stores meet minimum security guidelines. Ex. Expert 11 ¶ 124 (Rubin). In this scenario, Apple could be unable to leverage the experience with its own technology and standards in seeking to ensure that third parties meet those standards. *Id.* Apple's users, however, would face additional burdens from the need to take steps to try to determine whether an app store is secure and trustworthy. *Id.* Apple also could have to incur additional costs in connection with monitoring its ecosystem and providing support to users who face risks from third-party app stores but may attribute some of the responsibility to Apple, as the platform provider. *Id.* None of those are costs that exist in the current system. *Id.* And even then, Epic's requested order would have the extraordinary result of preventing Apple from deploying features that it has developed at enormous expense to enhance consumer security. *See supra* §§ III & VIII.
624. In addition to these problems with Epic's proposed solution, allowing stores-within-stores also would force Apple to make available to developers various aspects of its iOS technology, including technology that it has previously not made available before—as is its right under the intellectual property laws—to third parties. Ex. Expert 12 ¶¶ 66–67. In addition, allowing stores-within-stores, and the distribution of apps through alternative sources, could lead to various security risks, including but not limited to allowing third parties to install root certificates on iOS for app verification, potential propagation of malicious apps on iOS using a stamp of a compromised third party or a third party that maintains an insecure app review process, or otherwise permitting the installation of apps with entitlements that have not been reviewed for malicious or other ulterior motives. Ex. Expert 11 ¶ 116 (Rubin).
625. At bottom, Epic's requested order enjoining Apple from “[r]estricting, prohibiting, impeding or deterring users of iOS devices . . . from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store,” Dkt. 276-1, would have the extraordinary result of preventing Apple from deploying features that it has developed at enormous expense to enhance consumer security.
 - 625.1 Epic as at times suggested that its requested relief would not prevent Apple from performing app review. *See* Trial Tr. 2993:23–2994:13 (Schiller). That suggestion is false as a legal matter, because Epic's proposed relief would enjoin Apple for three years from “enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store,” with the only exception being for the prevention of the distribution of “malware.” Dkt. 276 1 at 4–5. Epic's requested

relief would not permit Apple to exclude a third party app store that, for example, included pirated apps, phishing apps, or offensive apps.

625.2 In any event, Mr. Schiller testified that if Apple were required to distribute third-party app stores through the App Store, “clearly, if there is a store within a store, all of the apps and service that are delivered through those stores are not reviewed by App Review,” and therefore Epic’s requested relief actually “would eliminate App Review to the extent that third parties decided to put stores within the App Store.” Trial Tr. 3185:20–3186:3 (Schiller).

C. Epic’s proposed relief would undermine the reliability and quality of the iOS ecosystem and increase Apple’s costs

626. Because reliability and security are intertwined, and reliability ensures that security controls work as expected, a decrease in security (as discussed above) is likely to coincide with a decrease in reliability. Ex. Expert 11 ¶ 18 (Rubin).
627. Epic executives have recognized the importance of app quality in the competitive landscape, Trial Tr. 261:13–23 (Sweeney), but Epic’s proposed solutions would degrade the reliability and quality of apps.
628. Apple’s App Store Review Guidelines are designed not only to ensure that apps function properly, but to promote a high-quality experience for the user. Ex. Expert 11 ¶ 59 (Rubin). Because of this diligence in ensuring app quality, iOS consistently scores higher than Android on metrics of user satisfaction and perceived platform quality. Ex. Expert 11 ¶ 49 (Rubin). Indeed, Dr. Evans concedes that Apple has established a reputation for reliability and quality of its products, and that Apple’s brand is recognized as one of the most valuable in the world. Trial Tr. 1689:16–1690:16 (Evans). The ability to control the distribution of such content is directly related to security—Dr. Rubin testified that malware “seems to be much more prevalent when there’s adult and other inappropriate content” available for download, particularly in ad-based app stores. Trial Tr. 3767:9–10 (Rubin).
629. Apple has long provided a level playing field on the App Store, where “the best apps will rise to the top because of reviews, ratings, and downloads.” Apple Ex. Depo. 10 at 172:20–22 (Shoemaker). Yet Dr. Evans could not even clearly say whether, in his proposed “but-for” world, Apple could refuse to distribute an app store “that offers pornography,” saying first that he did not “have a good answer for that one,” and then later hedging and saying “that is something that Apple could – could do.” 2417:16–19, 2418:3–2419:4 (Evans).
630. For the same reasons described above, Apple would incur significant additional costs in attempting to maintain the reliability and quality of apps on the App Store. *See supra* § XXII.C.

D. Epic’s proposed relief would undermine Apple’s ability to maintain and enforce consumer privacy protections

631. Apple believes that privacy is a human right. Trial Tr. 3937:8–11 (Cook). Apple takes measures to ensure user privacy, including but not limited to requiring users to opt in before sharing data and implementing differential privacy, which allows Apple to analyze de-individuated data. Ex. Expert 11 ¶ 27 (Rubin).
632. As Dr. Rubin explains, security and privacy are two sides of the same coin. Privacy relates to protecting data from unauthorized access or disclosure. Security and privacy are intertwined in that security controls dictate the level of privacy enforced, and privacy technologies can guarantee a higher degree of security. Ex. Expert 11 ¶ 18 (Rubin).
633. For the reasons discussed above, Epic’s proposed “solutions” will degrade iOS security. *See supra* § XXI.C. This means that they will also degrade users’ privacy. Ex. Expert 11 ¶ 95 (Rubin). Dr. Evans agreed that in his “but-for” world, “Apple will lose control over the amount of respect for user privacy rights that are offered by apps on the iPhone.” Trial Tr. 2422:15–2423:15 (Evans). Apple’s ability to enforce its privacy policies would be impacted because many developers may choose points of distribution that do not enforce Apple’s privacy policies, which would force users to download apps from those alternatives. Trial Tr. 3423:5–15 (Federighi).
634. The Chinese marketplace presents an example. Ex. Expert 11 ¶¶ 100–04 (Rubin); *see also* Trial Tr. 3778:5–9 (Rubin). Epic’s experts have cited China’s Android market as a competitive field. Trial Tr. 2427:18–21 (Evans); Ex. Expert 1 ¶¶ 108, 165(ii), 180, 299 (Evans). But the multitude of app stores there has increased the frequency of malware downloaded by users. Trial Tr. 2428:20–24 (Evans) (Dr. Evans recognizing that the incidence of malware on Android devices in China is significantly higher than the incidence of malware on iOS devices in China); Ex. Expert 11 ¶¶ 100–04 (Rubin). In fact, a 2020 report showed that the top three stores worldwide where users were most likely to download malware were all from China and heavily used by Chinese users. DX-4934.006. As far back as 2013, studies have shown that the fragmentation in China’s Android market due to the “little control Google has over it” has resulted in “nearly 35 percent of the Android apps . . . secretly stealing user data unrelated to the app’s functionality.” DX-4555.001.
635. For the same reasons described above, Apple would incur significant additional costs in attempting to maintain the privacy protections of apps on the App Store. *See supra* § XXI.C.

E. Apple would have to redesign iOS to permit the “solutions” Epic seeks

636. Unlike macOS, the iPhone is not designed to facilitate sideloading of third-party applications. Ex. Expert 11 ¶ 76 (Rubin); *see* § IV.B (describing reasons for designing iOS in a way that was more secure than macOS).
637. Epic’s proposed “solutions” would require Apple to reengineer iOS. *See* Trial Tr. 3359:24–3360:14 (Federighi) (describing Apple’s effort to “engineer and end-to-end

system that could give customers that confidence”); Trial Tr. 3734:10–3735:4 (Rubin). This would countermand Apple’s original decision not to allow other stores within the App Store. Trial Tr. 2831:7–21 (Schiller). 3360

XXIII. Dr. Athey’s “Economic Middleware” Approach Does Not Make Sense

638. Dr. Athey defines a new concept in her report that she calls “economic middleware,” or simply “middleware” as technologies that have one or more of the following effects: (1) reduce user applications-related switching costs, (2) reduce user applications-related mixing-and-matching costs, (3) reduce developers’ costs of providing services that enable user app migration and synchronization to multiple platforms, further reducing user app-related switching and mixing-and-matching costs, and (4) reduce developers’ multi-homing costs. Trial Tr. 1806:15–18 (Athey); Ex. Expert 4 ¶ 47 (Athey).
639. Middleware, as technically defined, aims to ease the development of creating software for a given operating system as well as ease the ability to create software (e.g., games) that works on multiple devices and operating systems. Ex. Expert 6 ¶ 265 (Hitt).
640. Dr. Athey’s “economic middleware” is different from the well-established definition of middleware, which is software that lies between an operating system and the applications running on it. Trial Tr. 1772:7–16, 1805:11–14 (Athey). Technical middleware that allows developers to develop games across platforms is already supported on iOS. Ex. Expert 6 ¶ 265 (Hitt).
641. Dr. Athey’s methodology—and thus her conclusions—are unreliable. Ex. Expert 6 ¶¶ 257–66 (Hitt).
642. First, reducing switching costs does not necessarily increase competition, and Dr. Athey cites no economic literature supporting her belief that competition necessarily would be enhanced here. *See* Ex. Expert 4 ¶ 34 (Athey).
643. Rather, the impact of switching costs on equilibrium prices is an empirical question. Dr. Athey has not performed the empirical analysis required for her opinion to be reliable.
644. Moreover, because multi-platform app stores do not typically offer significant technical middleware, it is unlikely that they would have a significant impact on developer multi-homing costs. Ex. Expert 6 ¶ 259 (Hitt). While “multi-platform app stores” may provide store-specific APIs that extend across devices, a developer must still develop a game or app and optimize it across different operating systems; store-specific APIs do not solve that problem. *Id.*
645. Multi-platform app stores could in fact generate additional costs for developers that Dr. Athey has not considered. Ex. Expert 6 ¶ 261 (Hitt). For instance, developers that wish to offer their app on both Steam and EGS would have to utilize two sets of APIs for the same operating system, increasing costs. Ex. Expert 6 ¶ 262 (Hitt). Moreover, Dr. Athey did not consider issues related to security or privacy in connection with their theory of economic middleware. Trial Tr. 1556:20–1557:2 (Athey).

646. Dr. Athey’s proposals to reduce switching costs between the iOS and other platforms also would reduce product differentiation between iOS and other platforms—Mr. Sweeney admitted that user privacy and security are “fundamental competitive differentiators for Apple.” Trial Tr. 302:19–21 (Sweeney); *see also* Trial Tr. 1823:2–9 (Athey) (Dr. Athey agreeing with Mr. Sweeney’s testimony on competitive differentiators). Thus, Dr. Athey’s proposal would reduce existing competition.
647. Dr. Athey’s analysis also ignores the role of Apple’s intellectual property. She acknowledges that her proposed “economic middleware” would connect to operating systems through APIs—which at least in the case of iOS would require the use of Apple’s intellectual property. Trial Tr. 1812:3–7 (Athey). But she does not assess the costs, much less justify, the imposition of an obligation on Apple to redesign its existing intellectual property—devices and software—as well as a subsequent duty on Apple to license that modified intellectual property on the terms and conditions Epic prefers. Indeed, Dr. Athey did not speak to any engineers, review any documents from Apple or Epic regarding the implementation of “economic middleware” in iOS, or review any Apple code in analyzing whether and how “economic middleware” could be implemented in iOS. *See generally* Ex. Expert 4 ¶¶ 47–66, 76–85 (Athey).
648. Many developers already possess solutions for cross-platform portability of game progressions, monetization, and play across operating systems, including iOS. Professor Athey’s theoretical “economic middleware” concern is, in short, a solved issue. Ex. Expert 6 ¶¶ 263–65 (Hitt). For instance, until the hotfix, iOS *Fortnite* users could freely transfer their content, purchases, and game progress between devices on which users play the game. Ex. Expert 6 ¶¶ 52–53 (Hitt). The vast majority of the highest grossing game apps allow consumers to purchase content outside the iOS app for use within the iOS app. Ex. Expert 6 ¶ 51 (Hitt).

XXIV. IAP Is Not A Separate Product But Rather An Integral Part Of The App Store

649. IAP did not exist prior to the App Store. Trial Tr. 2769:23–2770:8 (Schiller). It is not a separate product and was not put through Apple’s process for new products. Trial Tr. 2795:2–25 (Schiller). It was specifically developed in response to input from App Store developers and provides developers with the ability to offer enhanced in-app content without having to create a separate version of the app for users. Trial Tr. 2770:9–14 (Schiller).
650. IAP is associated with several areas of commerce within the Apple ecosystem, including validating the developer and the user, understanding refunds, conducting fraud checks, and many other functions. Trial Tr. 2796:1–15, 2797:3–10 (Schiller). It also is involved with setup of an account, purchase and transacting, financial management tax, fraud prevention steps, and customer support. Gray TT. These areas are connected to various areas of Apple Media Products (“AMP”), such as the App Store, the iTunes Store on iOS, Apple Music, and iCloud. Gray TT. This suite of services goes well beyond mere payment processing: As Epic’s executives discussed internally, “when you come to IAP within a game, outside of AppStore and Google Play, there is really no truly comprehensive payment solution that does everything needed for a game company.” DX-4496.001; *see also* Trial Tr. 1564:15–

1565:2 (Evans) (Dr. Evans acknowledging that payment processing is a narrow, specialized function).

A. IAP is an integrated feature of iOS app distribution

651. IAP is not merely a payment processor or payment settlement form. Trial Tr. 955:14–16 (“IAP, as part of the commerce engine, enables the safe and frictionless delivery of digital goods from a developer to an end user. IAP is part of the commerce engine. It helps unlock features to improve the user experience like apps to buy”); Trial Tr. 2798:14–19 (Schiller); Ex. Expert 8 ¶ 162 (Schmalensee). In fact, IAP does not process payments itself—that function is performed by third parties like Visa. Trial Tr. 2798:14–19 (Schiller); Trial Tr. 1565:3–6 (Evans) (“The payment processor authenticates the card and then it knows how to actually go up the line, fetch the money, and then ultimately put the money into the developer’s bank account.”). Nor is Apple’s commission merely a fee for payment processing. Trial Tr. 1884:25–1885:1 (Schmalensee). Rather, the bundle of IAP-related services allows consumers to view their purchase history and to restore purchases, Gray TT, provides family account sharing and global parental controls, Trial Tr. 2796:16–2797:2 (Schiller); Ex. Expert 8 ¶ 151 (Schmalensee), enables customer support for in-app transactions issues, Trial Tr. 2798:24–2799:11 (Schiller), and boosts transaction security, Trial Tr. 1894:15–1895:1 (Schmalensee). IAP is thus an integrated suite of services within the iOS app distribution feature set. Ex. Expert 8 ¶ 136 (Schmalensee); Gray TT; *see also supra* § III.F.
652. IAP supplies multiple services to both developers and users that are inseparable from the transactions facilitated by the App Store. Trial Tr. 1894:11–1895:12 (Schmalensee). The very purpose of the App Store is to provide transaction services involving digital content simultaneously to both developers and consumers. Ex. Expert 8 ¶ 135 (Schmalensee). Consumers make payments and receive products, and developers receive payments and deliver products (or have Apple make delivery for them). *Id.* For transactions for which the developer expects a payment, delivery of that payment is an integral part of the transaction, and making that payment is an integral part of the transaction for the consumer involved. *Id.*
653. Payment and the accompanying services supplied by IAP are thus inputs into the transactions provided by the App Store. Ex. Expert 8 ¶ 136 (Schmalensee). The two sides of a transaction platform are not economically separable; if a developer wishes to earn revenue from its digital products, app distribution is inseparable from payment. Ex. Expert 8 ¶ 135 (Schmalensee).
- 653.1 Indeed, Dr. Evans agreed that substantively identical functionalities from Uber and Lyft—that is, the requirement that Uber and Lyft drivers use Uber’s and Lyft’s payment solutions and pay those companies a commission—are not separate products (and are not a tying arrangement). Trial Tr. 1654:17–1655:22 (Evans); *see also* Trial Tr. 1657:8–22, 1659:25–1660:16 (Evans) (agreeing that similar functionalities at Grubhub, Wish, StubHub, DoorDash, Instacart, Postmates, Amazon Shopping, Wal-Mart, and eBay are not separate products). Counsel for Epic attempted on redirect to suggest that a more apt analogy to the App Store

would be if a rider and an Uber driver privately arranged for the driver to provide ride services to the rider outside of the Uber app, and Uber insisted that the driver still use its payment solution, *see* Trial Tr. 1712:17–23 (Evans), but of course in that scenario, the rider and the driver are no longer using Uber’s services or platform, whereas an app uses Apple’s APIs and intellectual property every time it transacts with an Apple user through iOS, *see* Malackowski TT.

653.2 In his rebuttal testimony, Dr. Evans distinguished other firms that require the use of their own payment solutions for physical purchases—such as Amazon and Wal-Mart—on the ground that “in the case of Apple, that lane is providing access to hundreds of millions of iPhone users so that’s a – that’s a much more – it’s a much more serious issue than – than Amazon and Wal-Mart.” Trial Tr. 2385:6–13 (Evans). Dr. Evans did not explain why the number of iPhone users was relevant to his opinion.

B. No demand exists for IAP that is separate from distribution via the App Store

654. There is no separate demand for IAP and app distribution, just “a desire not to pay a commission.” Trial Tr. 1887:10–11 (Schmalensee); Ex. Expert 8 ¶¶ 155–63 (Schmalensee). Dr. Evans pointed to no examples of a successful commission-charging platform that allowed alternative payment systems to avoid that commission. Trial Tr. 1888:2–1888:7 (Schmalensee).
655. Developers have a contractual obligation to pay a commission to Apple for in-app purchases. *See supra* § VI.C. Although the 30% commission on digital in-app purchases is sometimes colloquially referred to as part of IAP, in fact the commission and IAP are two separate things. Trial Tr. 925:24–956:7 (Fischer). Thus, even if developers were allowed to contract directly with third-party payment processors or do so via some intermediary system like Square, any developer using another payment processor instead of IAP would have to pay that processor’s fees in addition to the commission that it is contractually obligated to pay Apple. Ex. Expert 8 ¶ 157 (Schmalensee); PX-2621.004–.005. Therefore, because using third-party payment processors would be *more* expensive for developers, no rational developer would use them. Ex. Expert 8 ¶ 158 (Schmalensee).
656. Although Apple has long collected commissions through IAP, Apple has never charged separately for the use of its payment solution. Trial Tr. 2798:22–23 (Schiller). Nor has Apple ever marketed its IAP technology for use on other digital transaction platforms or offered to sell IAP services separately. Trial Tr. 2795:2–5 (Schiller); Ex. Expert 8 ¶ 156 (Schmalensee).
657. Similarly, other platforms require developers to use their game payment systems, including Google Play, Steam, [REDACTED], Xbox Live Store, and Sony’s PlayStation Store. Trial Tr. 619:12–14, 622:6–9 (Wright); Trial Tr. 827:7–12 (Ko); DX-3505; Ex. Expert 1 ¶¶ 171, 235 (Evans). There is no evidence that these platforms have separately marketed or offered for sale their payment solutions.

658. The fact that some developers like Epic have tried to circumvent IAP by using their own payment processors does not provide any valid evidence that there is a separate demand by these developers for such services. Ex. Expert 8 ¶ 163 (Schmalensee). Rather, it shows that developers would prefer to not pay, or pay less in, commission to Apple for Apple's services and the use of its intellectual property. *Id.*
659. In the but-for world contemplated by Epic—in which IAP was optional—Apple would still be entitled to charge a commission whether or not developers chose to use IAP. Ex. Expert 8 ¶ 157 (Schmalensee). Given that third-party payment processors would charge an *additional* fee—and that constructing a payment solution would require investment by the developer—there is no reason to believe that developers would prefer unproven payment mechanisms that simply added to their costs for app distribution. Ex. Expert 8 ¶¶ 157–58 (Schmalensee).

XXV. Even If IAP Were A Separate Product, It Has Not Been Tied

A. There is no “iOS in-app payment processing” market

660. Dr. Evans claims that there is a relevant, single-brand market for payment solutions for accepting and processing payments for digital content purchased within an iOS App, Trial Tr. 1595:19–1596:1, 1661:9–11 (Evans); Ex. Expert 1 ¶ 247 (Evans), thus alleging a tie between two single brand markets, Trial Tr. 1661:9–11 (Evans). As an initial matter, Dr. Evans describes the alleged product in the “iOS in-app payment processing market” as a payment solution service that Apple requires developers use for “the actual transaction between the developer and the consumer for the exchange of digital content.” Trial Tr. 1618:4–12 (Evans). Because of this, as Dr. Evans acknowledges, the “actual transaction” is not even in Dr. Evans’ alleged proposed market definition (or Dr. Evans’ other two proposed markets). Trial Tr. 1618:7–9, 1619:3–10 (Evans); *see supra* § XXIV.A.
661. According to Dr. Evans, “the relevant market for evaluating exclusionary conduct is the one that would exist in the absence of that conduct.” Trial Tr. 1662:10–13 (Evans). Epic’s proposed definition hinges on the existence and application of the challenged restraints as Epic alleges; without those alleged restraints, the relevant market would be different. Trial Tr. 1616:18–1617:6 (Evans); Ex. Expert 1 ¶¶ 37, 39, 256–57 (Evans).
662. Dr. Evans seeks to support the existence of such a market through an inapt comparison payment processing services. *See* Trial Tr. 1601:6–13 (Evans); Ex. Expert 1 ¶¶ 259–64 (Evans). As discussed above, IAP is not a mere payment processing technology, as IAP provides a far broader suite of services than mere payment processing. *See supra* § III.F & XXIV. Even according to Dr. Evans, a competing payment solution would have to be the creation of a new collaboration between a developer and third-party payment processor, Trial Tr. 1665:8–18 (Evans); Ex. Expert 1 ¶¶ 224, 238 (Evans), and in his view, it is *developers*, not other transaction platforms, that would compete with Apple for the provision of payment solutions, Trial Tr. 1665:8–15 (Evans). Accordingly, the products in Dr. Evans’ proposed payment solutions market are neither bought nor sold, rendering the market definition implausible. Trial Tr. 1885:17–25 (Schmalensee).

663. Even Epic does not view EGS's commission as a payment processing fee but rather a payment "for access to [its] audience." Trial Tr. 1271:21–24 (Allison). Comparing EGS's commission to a payment processing fee would be comparing apples and oranges. Trial Tr. 1271:21–1272:4 (Allison).
664. Apple's commission on in-app purchases, collected through IAP, and the fee assessed by third-party payment processors are thus apples and oranges. *See* Ex. Expert 8 ¶ 162 (Schmalensee).
665. Dr. Evans advances an HMT that, he says, shows that payment processing solutions within iOS are a standalone relevant market. Trial Tr. 1602:15–1603:11 (Evans). This test is fatally flawed and should be disregarded. Ex. Expert 8 ¶ 164 (Schmalensee). In order to show that Apple profitably raised the price of payment solutions by more than a SSNIP, Dr. Evans compares Apple's App Store commission rate to the alleged average rate of third-party processing fees. Ex. Expert 1 ¶¶ 259–64 (Evans). But the App Store commission rate is *not* a payment processing fee. Trial Tr. 1884:220–1885:1 (Schmalensee); Ex. Expert 8 ¶¶ 166–67 (Schmalensee). While the App Store does provide payment processing services, it also provides numerous other services to attract and retain both end-users and developers. Ex. Expert 8 ¶ 166 (Schmalensee). It is also a critical part of the broader iOS platform, from which users and developers benefit. *Id.* In other words, it is no surprise that the App Store commission rate is higher than the average rate of third-party processing fees, because developers are paying for a lot more than just processing. *Id.*

B. Apple has no market power in a market that includes all reasonably interchangeable payment processing providers

666. If a discrete in-app payment processing market existed, Apple would not come close to possessing market power. Ex. Expert 8 ¶ 170 (Schmalensee).
667. There is nothing inherently different about performing the narrow task of payment processing in the iOS context as opposed to any other platform. Ex. Expert 8 ¶¶ 143–44 (Schmalensee). Accordingly, the relevant market would include payment processing services that operate on a variety of platforms, including large companies like PayPal, Braintree, and Square. Ex. Expert 8 ¶ 170 (Schmalensee). Epic's chief economic expert does not offer an opinion on what the market share of supposedly competing payment solutions would be in a payment processing market. *See* Trial Tr. 1665:22–25 (Evans) (agreeing "that Apple's digital App Store transactions account for a miniscule percentage of the online payment processing industry"); Ex. Expert 1 ¶¶ 267, 268 (Evans). Given the number of large payment processing services, Apple's share would be miniscule. Ex. Expert 8 ¶ 170 (Schmalensee). As Dr. Evans agreed, "payment processors compete with one another to win business from developers." Trial Tr. 1565:23–25, 1568:12–19 (Evans)
668. Even if the relevant market were limited to payment processing on iOS, Apple would not exercise market power. Ex. Expert 8 ¶ 169 (Schmalensee). Many payment processors that handle payment processing for physical goods or services in the App Store also handle other transactions online. *Id.* In the market apparently envisioned by Epic, barriers to entry

would be minimal and firms would rapidly provide payment processing services for digital transactions. *Id.*

669. The total dollars transacted through the App Store’s U.S. storefront in 2018 was [REDACTED] which small compared to the total payment volume reported by online payment processing companies and the total e-commerce payment volume in the U.S. Ex. Expert 8 ¶ 170 (Schmalensee). Dr. Evans acknowledged that Apple is not trying to monopolize the payment processing industry, Trial Tr. 1665:21 (Evans), and indeed, the amount processed by Apple through the App Store’s U.S. storefront in 2018 was thus at most 3% of in-app purchases by online payment processing companies and less than .2% of the total e-commerce volume in the U.S. in 2018. Trial Tr. 1886:7–10 (Schmalensee); Ex. Expert 8 ¶ 170 (Schmalensee); *see also* Trial Tr. 1665:22–25 (Evans) (Dr. Evans conceding that Apple’s App Store transactions account for a “miniscule percentage” of the online payment processing industry).

C. There is no contractual “tie”

670. Apple does not require developers to monetize their apps using IAP. Ex. Expert 8 ¶ 171 (Schmalensee). Offering in-app purchases of digital content—the type of transaction that uses IAP—is just one of the many options offered to developers to monetize their apps in the App Store. *See supra* § VI.A.
671. Most game app developers choose alternative monetization methods. Ex. Expert 6 ¶ 206 (Hitt). Well over 80% of apps, including 76% of game apps, are completely free, and developers pay no commission to Apple for them. Trial Tr. 2094:13–23 (Hitt); Ex. Expert 6 ¶ 169 (Hitt); Ex. Expert 8 ¶ 172 (Schmalensee). And about 81% of game app developers monetize through in-app advertising, which also incur no commission. Ex. Expert 6 ¶¶ 134, 206 (Hitt). Transactions occurring on game streaming services operating on the Safari browser are not required to use IAP. Trial Tr. 525:21–25 (Patel); 614:11–13 (Wright). And, far from blocking the distribution of such services on its Safari browser, Apple has actually assisted developers in their doing so. Trial Tr. 616:2–7 (Wright). Similarly, developers of apps like Tinder are not required to use IAP, because they can offer content through websites instead. Trial Tr. 1571:9–12 (Evans). As the Court stated, “you can use the app without anybody paying Apple anything if you subscribe somewhere else.” Trial Tr. 1571:15–17 (Evans).
672. Developers also can choose to offer paid downloads, which do not require the use of IAP. *See supra* § VI.B. Similarly, apps that offer physical goods or services do not use IAP. *See supra* § VI.B. Apple in fact requires that these apps use *non*-IAP payment processing. PX-2790.12 (§ 3.1.3(e)); Trial Tr. 1987:5–9 (Schmalensee); Ex. Expert 8 ¶ 172 (Schmalensee). Dr. Evans conceded that there are “some apps that are treated differently” with respect to payment processing on the App Store. Trial Tr. 1569:1–7 (Evans).
673. The distinct business models that involve in-app purchases are the Freemium and Paymium models, offered by only about 33% and 6% of developers, respectively. Ex. Expert 8 ¶ 172 (Schmalensee). Yet even for these models, in-app content often can be purchased and used without IAP: As the App Store Guidelines explain, “[a]pps that operate across multiple

platforms may allow users to access content, subscriptions, or features they have acquired in your app on other platforms or your web site.” PX-2790.11 (§ 3.1.3(b)).

674. Epic recently launched a subscription service. Trial Tr. 1301:4–21, 1357:17–25 (Weissinger). Were *Fortnite* still available on iOS, the subscription service would have allowed Epic to sell subscriptions outside of the App Store that could then be used by iOS users. Ex. Expert 6 ¶ 206 (Hitt). Finally, *Fortnite* is poised to be released on the GeForce Now in October 2021, and Epic need not pay Apple a commission for transactions occurring on that platform. Trial Tr. 525:21–25, 526:15–18 (Patel); Trial Tr. 2114:6–14 (Hitt) (“... so Epic could have taken advantage of subscriptions, and I believe there are some types of subscription products available now, but that’s something they can do.”).
675. [OMITTED]
676. Consumers, likewise, are not required to use IAP. Again, many applications are completely free and do not offer in-app purchases at all. Ex. Expert 8 ¶ 172 (Schmalensee). For those apps that do offer in-app digital content for sale, users may download and access apps for free and purchase the digital content on other platforms. Ex. Expert 8 ¶ 174 (Schmalensee). For example, as of December 2020, consumers can buy V-Bucks from Epic’s website using other platforms. Trial Tr. 298:10–299:12 (Sweeney); Ex. Expert 6 ¶ 152; *see also* Ex. Expert 8 ¶ 174 (Schmalensee). Epic charges the same amount for V-Bucks on its website as it does on game consoles. Trial Tr. 2410:3–4 (Evans). Consumers who purchased V-Bucks from another platform then essentially have “cash on hand” and can use those V-Bucks on the *Fortnite* iOS app without using IAP. Trial Tr. 298:24–299:5 (Sweeney). Indeed, this kind of cross-platform functionality has been a point of emphasis for Apple given its focus on improving consumers’ experiences. DX-3796.003–.004.

D. Apple’s conduct did not foreclose any significant share of the relevant market

677. As discussed above, the amount processed by Apple through the App Store’s U.S. storefront in 2018 was at most 3% of the total dollars processed in the U.S. by online payment processing companies and less than .2% of the total e-commerce volume in the U.S. in 2018. Ex. Expert 8 ¶ 170 (Schmalensee); *see also supra* § XXV.B. Thus, Apple was not capable of foreclosing a significant share of any relevant “payment processing” market. Ex. Expert 8 ¶ 170 (Schmalensee).
678. Nor did Apple’s IAP requirement prevent developers from using other payment processing services for transactions that did not take place in an iOS app. For instance, of those *Fortnite* players on iOS who have made a purchase, 65.6% of them *exclusively* make purchases on other platforms that they can then access in iOS. Ex. Expert 6 ¶¶ 74–75 (Hitt).
679. Moreover, IAP facilitated new forms of commerce by enabling the freemium model. Ex. Expert 8 ¶ 134 (Schmalensee).

XXVI. The App Store's IAP requirement Is Supported By Procompetitive Justifications**A. Apple's IAP is integral to Apple's ability to efficiently collect its commission**

680. To collect its contractually agreed commission on sales of in-app digital content, Apple needs to know when such transactions take place. Trial Tr. 2793:20–2794:7 (Schiller). Ensuring that developers use IAP for such sales ensures that happens. *Id.* It also ensures Apple's commission is collected efficiently. Trial Tr. 1890:11–15 (Schmalensee); Trial Tr. 1666:14–16 (Evans). Apple handles well over a billion-and-a-half in-app transactions each year—most fairly small. Trial Tr. 1884:18–21 (Schmalensee).
681. To do so, IAP quickly performs several functions as discussed above. *See supra* § III.F & XXIV. By automating all of these processes, IAP obviates the need for (and expense of) tracking, audit, and collection of Apple's commissions on any in-app purchases of digital content. Trial Tr. 1894:11–1895:12 (Schmalensee); Ex. Expert 8 ¶¶ 138–39 (Schmalensee). Indeed, without such automatic processes, a developer using an external payment mechanism could seek to evade a commission owed to Apple, and Apple would have no technological ability to collect any commissions on the sale. Ex. Expert 8 ¶ 139 (Schmalensee). This would lead to laborious reconciliation efforts and dispute resolution—turning an automated, near-instantaneous process accomplished through IAP into a fraught and drawn-out one. Ex. Expert 8 ¶¶ 145–46 (Schmalensee).
682. It also ensures Apple is able to prevent developers from free-riding on Apple's intellectual property. Without IAP, developers bypassing IAP would in effect exploit Apple's historical innovations and investments while avoiding paying the remuneration an intellectual property holder is entitled to collect. Ex. Expert 12 ¶ 42 (Malackowski). Basic principles of economics state that this would chill Apple's incentives to make similar investments and undertake the risk of similar innovations in the future—to the detriment of consumers and developers. Ex. Expert 12 ¶ 64 (Malackowski). Indeed, the prevention of free-riding is widely recognized by economists and courts as procompetitive. *Id.*

B. Apple's IAP provides a safe, secure, efficient, and familiar experience for consumers

683. The combination of IAP services provides many benefits to consumers.
684. First, it enables a safe and secure marketplace for private transactions. Ex. Expert 8 ¶ 149 (Schmalensee).
685. IAP is at least as secure, and has the potential to be more secure, than other payment processing services. Ex. Expert 11 ¶ 126 (Rubin). IAP also protects the privacy and security of iOS users by withholding their private information from developers that users may not trust as much as they do Apple. Ex. Expert 8 ¶ 150 (Schmalensee); Ex. Expert 11 ¶ 126 (Rubin).
686. Apple has legitimate grounds for concern about permitting app developers to handle payment processing themselves, because it exposes consumers to security and privacy risks. Ex. Expert 11 ¶¶ 126–29 (Rubin). Other platforms have had security problems; indeed, *Fortnite* itself has experienced hacking attacks. Ex. Expert 11 ¶ 129 (Rubin); DX-

3536.001. And Apple's ability to monitor and detect fraud and abuse—and therefore to protect its consumers—would be greatly curtailed. Ex. Expert 11 ¶ 128 (Rubin).

687. As discussed above, IAP also is a very convenient, single point of sale for consumers. *See supra* § III.F. IAP also provides and enables a number of convenient features for iPhone customers. *See supra* § III.F.
688. Consumers experience a seamless process even when they obtain a new device. Ex. Expert 8 ¶ 150 (Schmalensee); *see also* Trial Tr. 1760:12–19 (describing the transition between Apple devices). That is because Apple can carry the consumer's preferences forward because they are linked to the Apple account. Trial Tr. 1894:11–1895:1 (Schmalensee). The account linkage also allows IAP to offer features and services that would be difficult or impossible for third-party processors to provide, such as a feature enabling users to view their entire purchase history and understand their spending behavior on different apps over time. Ex. Expert 8 ¶ 150 (Schmalensee).
689. [OMITTED]
690. IAP's features represent the significant investment and commitment Apple has made to ensure IAP is continually modernized to improve consumers' experience on the App Store.
- 690.1 For example, in 2011, Apple developed a state-of-the-art technology so that IAP could support the purchase of subscriptions, an innovative offering that developers and users alike have embraced since it was introduced. Trial Tr. 2800:23–2802:1 (Schiller).
- 690.2 Moreover, Apple's 2017 redesign of the App Store made in-app purchases more discoverable by featuring them in search results and on an app's product page. DX-5335.019. Not all of these features could be accomplished with the same efficiency and efficacy if Apple's centralized payment engine was replaced by a balkanized landscape of multiple, third-party payment providers. Trial Tr. 1895:2–12 (Schmalensee); Ex. Expert 11 ¶¶ 128–29 (Rubin).

C. Apple's IAP also benefits developers

691. The direct positive effects of the smooth functioning of IAP that consumers enjoy feed positive indirect network effects that benefit developers. Ex. Expert 8 ¶ 154 (Schmalensee). When consumers enjoy a better customer experience, developers indirectly benefit as well due to increasing demand of their apps, and vice versa. *Id.* In contrast, if some developers deployed third-party payment processors instead of the App Store's facility, their customers' purchase experiences could be less satisfactory. *Id.* This is likely to make the App Store as a whole less attractive to affected consumers, which, in turn, would make it a less profitable venue for developers. *Id.*
692. IAP has many benefits to developers as well. For instance, it takes care of currency conversions and tax-law compliance, so developers can focus on creating high-quality apps. Ex. Expert 11 ¶¶ 153–54 (Schmalensee). Without IAP, developers would have to contract with a different third party and incur an additional cost of these services.

693. IAP also conducts fraud-related checks. Trial Tr. 3187:1–16 (Schiller); Ex. Expert 8 ¶ 153 (Schmalensee). These features are useful for developers that may not have comparable means to combat fraud. Ex. Expert 8 ¶ 153 (Schmalensee).
694. Moreover, IAP enabled monetization methods—including freemium and paymium—that had not been previously available in the App Store. *See supra* § III.F.
695. [OMITTED]
696. As a result, many game developers, including Epic, use freemium or paymium models. Ex. Expert 8 ¶ 172 (Schmalensee). And they have earned enormous profits doing so. *See* Trial Tr. 2791:23–2793:1 (Schiller).

D. In light of these many benefits, digital transaction platforms commonly require use of their payment solution for digital transactions

697. Apple’s IAP requirement is not unique among transaction platforms. Indeed, other game transaction platforms impose a similar requirement on developers. Trial Tr. 1889:6–13 (Schmalensee); Ex. Expert 8 ¶ 141 (Schmalensee). As Mr. Sweeney stated with respect to *Fortnite*, every store which distributes *Fortnite* charges a fee on in-app purchases made on their platform and requires use of the store’s payment system to collect that commission. Trial Tr. 142:24–43:4, 180:17–84:9 (Sweeney).

697.1 Samsung’s Collaboration Agreement with Epic states: “Fortnite and the Epic Apps . . . shall use the in-application purchase platform operated by Samsung or its affiliates on the Android operating system on Samsung Devices (‘Samsung IAP’) for all in-application purchases made through credit card, debit card, PayPal, or Samsung Play in the Territory. [REDACTED]

[REDACTED] DX-3472.007 (§ 8.1). [REDACTED]

[REDACTED] DX-3472.020 (§ 9.11). [REDACTED]

[REDACTED] Trial Tr. 826:11–827:3 (Ko).

697.2 The Microsoft Store also provides very specific instructions for purchases of virtual goods and the use of Microsoft APIs: “You must use the Microsoft Store in-product purchase API to sell digital items or services that are consumed or used within your product. Your product may enable users to consume previously purchased digital content or services, but must not direct users to a purchase mechanism other than the Microsoft Store in-product purchase API.” DX-4434.008 (§ 10.8.1).

697.3 The Google Developer Distribution Agreement states “In order for You to charge a fee for Your Products and to be paid for Products distributed via Google Play, You must have a valid Payment Account under a separate agreement with a Payment Processor, be approved by a Payment Processor for a Payment Account, and maintain that account in good standing.” DX-3298.003 (§ 3.2).

698. These are but a few: Many other platforms—from Steam to eBay—require the use of their own (or their affiliate’s) payment processing systems. Trial Tr. 1888:8–1889:3 (Schmalensee); Ex. Expert 8 ¶ 141 (Schmalensee).

XXVII. There Is No Equally Efficient Alternative To IAP

699. Epic seeks to bar Apple from restricting in any way “the use of in-app payment processors other than” IAP. Dkt. 276-1 at 6.
700. As noted above, IAP is not payment processing technology but rather an integrated suite of features through which Apple can securely, reliably, and efficiently collect the commission payments to which it is contractually entitled. *See supra* §§ III.F & XXIV; Trial Tr. 1890:11–15 (Schmalensee) (“Q: In your view as an antitrust economist, as a expert on platforms, is Apple’s IAP requirement anti-competitive? A: No. Apple’s IAP requirement is an efficient way to collect a commission, and a commission-based business model appears to be the natural business model for online stores.”); Ex. Expert 8 ¶¶ 136, 149–50 (Schmalensee). Without IAP, Apple would no longer automatically receive those commission payments. *See* Ex. Expert 8 ¶ 145 (Schmalensee).
701. Instead, Apple would have to develop an alternative method to collect its commission. Ex. Expert 8 ¶ 145 (Schmalensee). Because the injunction Epic seeks would prevent such a mechanism from automatically collecting all commissions, any method would inherently incur higher costs. *Id.*; *see also* Trial Tr. 1666:17–25 (Evans) (Dr. Evans agreeing that neither he nor any of Epic’s witnesses had “analyzed the additional costs that Apple or, for that matter, developers and consumers would bear from collecting commissions from developers in more than 170 countries around the world”). As a result, Apple would have to calibrate its prices to account for the additional costs of this less-efficient transaction process. Ex. Expert 8 ¶ 139 (Schmalensee). Higher costs associated with such a mechanism could leave developers worse off as Apple might well pass on the increased costs. *Id.*
702. Alternatively, Apple might conclude that reliable alternative methods of collection either do not exist or are prohibitively expensive. Ex. Expert 8 ¶ 145 (Schmalensee). In this case, it would decide to cease charging commissions on in-app sales. *Id.* If Apple were forced to make such a fundamental change in its business model—departing from the model that has become an industry standard of charging a commission for at least some in-app purchases—it would almost certainly find it optimal to change other elements of its business model, to the benefit of some consumers and developers and to the detriment of others. Ex. Expert 8 ¶ 146 (Schmalensee). As detailed above, Apple’s current iOS business model has worked well for consumers and developers, as growth on both sides of the platform makes clear. *Id.*; *see also supra* § VIII. There is certainly no guarantee that an alternative model compelled by judicial decree would be any better. Ex. Expert 8 ¶ 146 (Schmalensee).
703. Alternative payment solutions also could put customer security at risk. Schmalensee TT. As discussed above, IAP has been designed with robust security features. *See supra* § III & IV.C. “[W]hen you use in-app purchase, you’re using services that are built in on the

phone versus a third-party library that may or may not have malware in it. . . . People can use infected libraries to give you third-party functionality. And then your password and user name are out there.” Apple Ex. Depo. 7 at 149:21–150:2 (Shoemaker).

704. In part because fraud detection techniques become more effective when there is more data to operate with, IAP’s widespread use within the Apple ecosystem has made its security protections particularly sophisticated. Ex. Expert 11 ¶ 128 (Rubin). Alternative payment solutions would deprive consumers of that benefit as no individual payment solution would have the same pool of data from which it could improve its security features. Ex. Expert 11 ¶ 126 (Rubin).
705. In addition, it is “a huge undertaking to build” a system akin to IAP—as Epic realized when creating EGS. DX-4496.001. Indeed, when Mr. Ko first joined Epic, Epic did not have many “solutions in currencies and payment methods” beyond the United States and western Europe, and believes even today that there is more room to improve. Trial Tr. 799:19–25, 800:19–22 (Ko). And Mr. Ko testified also that as of at least December 2019, only Apple and Google had offered a “comprehensive payment processing solution.” Trial Tr. 815:16–816:26 (Ko); DX-4496. Apple had the resources to build such a system and to continually invest in its improvement. Trial Tr. 2877:9–20 (Schiller). Making IAP secure, private, and reliable was also in Apple’s interest: Apple has a recognized brand for services that are secure, private, and reliable. Trial Tr. 1689:16–1690:16 (Evans).
706. Thus, allowing third-party payment systems, similar to allowing third-party app distribution mechanisms, could lead to less secure payment mechanisms and differing security standards that would facilitate bad acts.” Ex. Expert 11 ¶ 126 (Rubin).
707. Epic’s proposed relief would create a fractured environment, forcing consumers to use potentially dozens of different payment processors across various apps and devices instead of IAP—a single, secure solution in which consumers have learned to trust. Ex. Expert 11 ¶¶ 125, 128 (Rubin).

PROPOSED CONCLUSIONS OF LAW

I. Introduction¹

1. The Court observed at the preliminary injunction stage that Epic’s claims are “at the frontier edges of antitrust law.” Dkt. 118 at 10. The corollary to that observation is that in the heartland of antitrust law—as interpreted and applied by the Supreme Court and the Ninth Circuit—Epic’s claims are without merit.
2. Apple launched the iPhone in 2007, the App Store in 2008, and IAP in 2009. These were (and remain) revolutionary advancements in hardware and software innovation and integration, making possible the “smartphones” that are ubiquitous today but were unknown at the turn of this century. All of these features are genuine improvements that offer procompetitive benefits to developers and consumers in the form of increased security, privacy, and reliability, a more user-friendly experience, and differentiation from competitors. Apple obviously had no monopoly at the outset, and nothing that has transpired in the intervening decade changes that reality. To the contrary, Apple is subject to fierce competition in all of its business lines, and new competitors have emerged even during the pendency of this case.
3. In the product market relevant to Epic’s claims (digital game transactions), the App Store competes with transaction platforms available on other smartphones, other tablets, other mobile gaming devices, game consoles, and PCs. A nascent group of game streaming services is also attempting to disrupt the game app industry. Apple has no monopoly (or market) power, has undertaken no exclusionary conduct, has engaged in no concerted activity, and has inflicted no anticompetitive effects. On the contrary, there has been an explosive increase in the output of apps (including digital game transactions) without any increase in price. Indeed, Apple’s commission is competitive with that charged by all other digital game transaction platforms, and reductions in the App Store’s commission rates over time are inconsistent with the exercise of market power. In addition, the App Store offers numerous procompetitive benefits to developers and consumers, including unrivaled reliability, functionality, security, and privacy. Epic, in particular, has greatly benefited from Apple’s innovative products and services, including access to Apple’s proprietary software and other intellectual property.
4. Resolution of the case in Apple’s favor depends simply on a straightforward application of settled law to the facts to be established at trial, whereas each of Epic’s liability theories would require this Court to depart from established principles of antitrust law:

¹ Apple respectfully sets forth below the conclusions of law that the Court can and should adopt in ruling that each and every one of Epic’s causes of action (and, if necessary, requested remedies) fails as a matter of law or equity in light of the record that will be laid by the end of trial. The organization generally follows the parties’ Joint Submission Regarding Trial Elements, Legal Framework, and Remedies, Dkt. 276 (“Joint Elements Submission”), to which cross-references are included for convenience.

(a) Epic’s monopoly maintenance claim is premised on the notion that the antitrust laws preclude Apple from imposing conditions on the licensed use of its intellectual property, and impose on Apple a duty to deal with Epic on the terms preferred by Epic—to the detriment of other developers and consumers alike. But Apple has no obligation to license its intellectual property, and aside from a limited exception not applicable here, businesses are free to choose the parties with whom they will deal, as well as the prices, terms and conditions of that dealing.

(b) Epic’s essential facility claim relies on a theory of liability—denial of essential facility—that has never even been recognized by the Supreme Court. And even to the extent some courts have entertained such a claim, they have done so only with respect to preexisting, fixed bottlenecks, such as power grids and bridges, not a firm’s proprietary intellectual property developed through years of innovation. Epic’s essential facility claim asks the Court to be the first to hold that Section 2 requires innovating firms to make their innovations available to competitors on whatever terms competitors demand.

(c) Epic’s tying claim under Section 1 asks the Court to view the functionalities of the App Store separately, rather than as an integrated whole. Moreover, there is not even a tie here, because there is no requirement that Epic use IAP (the alleged tied product) in order to access Apple’s distribution services (the alleged tying product). If accepted, the longstanding limitations on tying liability—an already dubious and deteriorating theory of antitrust liability—would evaporate.

(d) Epic’s claim for concerted action under Section 1 urges the Court to hold Apple liable for concerted restraint in violation of the antitrust laws—the most suspect kind of conduct under the Sherman Act—even though there is *no concerted action alleged*. Epic would transform every unilateral course of dealing that includes a purchase contract, terms and conditions, or even an invoice into a conspiratorial restraint of competition. There is no basis in law for such an expansion of the meaning of concerted action.

5. The antitrust laws “were enacted for the protection of competition, not competitors.” *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 767 n.14 (1984) (quotation marks omitted). Far from protecting competition, Epic’s calculated media and legal “Project Liberty” campaign—including its surreptitious implementation of an undisclosed “hotfix” to intentionally and knowingly deprive Apple of revenue that Epic agreed to pay—arises out of its disagreement with the terms of a license agreement with Apple. At bottom, Epic is asking this Court to force alternative terms on Apple so that Epic can make more money. But Epic’s request would harm other developers and consumers, in addition to imposing unprecedented obligations on Apple to open its proprietary systems and engineering to third parties.
6. Apple is among the most innovative, competitive, dynamic, and creative companies in the United States, and millions of people benefit from its products and services. Those products and services are the result of billions of dollars of investment, in addition to substantial time and thought, and represent Apple’s intellectual property. Apple licenses that property—including access to iOS, development tools, and other proprietary resources—to Epic and other game developers on transparent terms. Those terms are

calibrated to protect the security, privacy, and reliability of iOS devices and their users, and do not violate the federal or state antitrust laws.

II. Market Definition (All Epic Counts)²

A. General Principles

7. A “threshold step in any antitrust case” is to define the relevant market. *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) (citing *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018)). “[C]ourts usually cannot properly apply the rule of reason without an accurate definition of the relevant market. Without a definition of the market there is no way to measure the defendant’s ability to lessen or destroy competition.” *Amex*, 138 S. Ct. at 2285 (quotation marks, alterations, and footnote omitted).
8. Generally speaking, “[t]he relevant market is the field in which meaningful competition is said to exist.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997). A “relevant market must include both a geographic market and a product market.” *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018).
9. It is the *plaintiff’s* burden to establish the relevant product and geographic markets. *See Thurman Indus., Inc. v. Pay ‘N Pak Stores, Inc.*, 875 F.2d 1369, 1373 (9th Cir. 1989); *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978) (noting that plaintiffs bear the “burden of proof” to establish a relevant market). To meet that burden, a plaintiff must produce specific evidence supporting the proposed market definition that is “relevant to the particular legal issue being litigated.” 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 533c (4th ed. 2020 supp.); *see also Moore v. James H. Matthews & Co.*, 550 F.2d 1207, 1218–19 (9th Cir. 1977) (plaintiff failed to establish “the relevant product market” where it failed to introduced adequate regarding “the products involved as to price, use, quality, and characteristics”); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 64 (D.D.C. 2011) (“Courts correctly search for a relevant market—that is a market relevant to the particular legal issue being litigated.” (alteration and quotation marks omitted)).
10. The relevant *product* market “must encompass the product at issue as well as all economic substitutes for the product.” *Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008); *see also* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 530c (4th ed. 2020 supp.) (“To define a market is to identify those producers providing customers of a defendant firm (or firms) with alternative sources for the defendant’s product or service.”). “Economic substitutes have a ‘reasonable interchangeability of use’ or sufficient ‘cross-elasticity of demand’ with the relevant product.” *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018) (quoting *Newcal*, 513 F.3d at 1045).
11. For products to be economic substitutes, they must be “reasonably interchangeable by consumers for the same purpose.” *United States v. E.I. du Pont de Nemours & Co.*, 351

² Market definition is addressed in § 4, pages 8–21 of the Joint Elements Submission.

- U.S. 377, 395 (1956). “Interchangeability implies that one product is roughly equivalent to another for the use to which it is put: while there may be some degree of preference for the one over the other, either would work effectively. *Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 437 (3d Cir. 1997) (quotation marks omitted). For example, “[a] person needing transportation to work could buy a Ford or Chevrolet automobile, or could elect to ride a horse or bicycle, assuming those options were feasible.” *Id.* (quotation marks omitted).
12. A plaintiff cannot ignore economic reality and “arbitrarily choose the product market relevant to its claims”; rather, the plaintiff must “justify any proposed market by defining it with reference to the rule of reasonable interchangeability and cross-elasticity of demand.” *Buccaneer Energy (USA) v. Gunnison Energy Corp.*, 846 F.3d 1297, 1313 (10th Cir. 2017) (quotation marks omitted). The proper market “can be determined only after a factual inquiry into the commercial realities faced by consumers.” *High Tech. Careers v. San Jose Mercury News*, 996 F.2d 987, 990 (9th Cir. 1993) (quotation marks omitted).
 13. The relevant market must include “the group of sellers or producers who have the actual or potential ability to deprive each other of significant levels of business.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) (quotation marks omitted).
 14. Where a defendant presents evidence of substitutability, it is the plaintiff’s burden to rebut that evidence to the extent it seeks to exclude products from its proposed market, particularly where it proposes a “very narrow definition.” *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978); *see also Rodney v. Nw. Airlines, Inc.*, 146 F. App’x 783, 787 (6th Cir. 2005) (stating that the plaintiff “carries the burden of proving that no . . . substitutes are available” (citing *Int’l Logistics Grp. v. Chrysler Corp.*, 884 F.2d 904, 908 (6th Cir. 1989))). The plaintiff must therefore “demonstrat[e] that there are *not* appropriate economic substitutes” for the defendant’s product. *Pistacchio v. Apple Inc.*, No. 20-CV-7034, 2021 WL 949422, at *2 (N.D. Cal. Mar. 11, 2021).
 15. As to *geographic* markets, “[t]he criteria to be used in determining the appropriate geographic market are essentially similar to those used to determine the relevant product market.” *Brown Shoe Co. v. United States*, 370 U.S. 294, 336 (1962). “A geographic market is an area of effective competition where buyers can turn for alternate sources of supply.” *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991) (quotation marks and alteration omitted). “The relevant geographic market for goods sold nationwide is often the entire United States.” *Heerwagen v. Clear Channel Commc’ns*, 435 F.3d 219, 228 (2d Cir. 2006).

B. Product Market³**i. The App Store Is a Two-Sided Transaction Platform**

16. The determination of the relevant product market takes on additional complexity when dealing with two-sided platforms. See generally *Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018) (addressing two-sided platforms in the context of antitrust market definition). “[A] two-sided platform” is one that “offers different products or services to two different groups who both depend on the platform to intermediate between them.” *Id.* at 2280.
17. In *Ohio v. American Express Co.*, 138 S. Ct. 2274 (2018), the plaintiffs challenged “anti-steering” provisions in Amex’s contracts with merchants, which prohibited merchants from compelling or encouraging consumers to use other credit cards with lower merchant fees. *See id.* at 2282–83. The plaintiffs alleged that these provisions were anticompetitive in that they resulted in higher merchant fees. *See id.* at 2283.
18. To determine the anticompetitive effect of the challenged contractual provisions, the Court focused first on the proper market definition. The Court held that “credit-card networks are two-sided platforms.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018). Amex acted as an intermediary between two sides of the credit-card network, with consumers on one side (using Amex’s cards and obtaining rewards) and merchants on the other (paying a fee to Amex but benefitting from an efficient payment solution and Amex’s network of consumers). *See id.*
19. The relevant feature of two-sided platforms is that they exhibit “indirect network effects,” meaning that “the value of the services” that the platform provides “increases as the number of participants on both sides of the platform increases.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018). The existence of these network effects requires that platforms “be sensitive to the prices that they charge each side,” because they cannot raise prices on one side without “risking a feedback loop of declining demand.” *Id.*
20. Two-sided transaction platforms are a subset of two-sided platforms. The distinguishing characteristic of two-sided transaction platforms is that “they cannot make a sale to one side of the platform without simultaneously making a sale to the other.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018); *see also id.* at 2298 (Breyer, J., dissenting) (noting that “there are four relevant features of [two-sided transaction platforms]: they (1) offer different products or services, (2) to different groups of customers, (3) whom the ‘platform’ connects, (4) in simultaneous transactions”).
21. Two-sided transaction platforms exhibit “pronounced indirect networks effects and interconnected pricing and demand,” and are thus “best understood as supplying only one product—transactions—which is jointly consumed by [users on both sides of the platform].” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 & n.8 (2018). The services that the platform provides to each side of the platform “are both inputs to this single product.” *Id.* at 2286 n.8.

³ Product market definition is addressed in § 4.1, pages 10–20 of the Joint Elements Submission.

22. The Court in *Amex* explained that credit-card networks were properly understood as a two-sided transaction platform because “no credit-card transaction can occur unless both the merchant and the cardholder simultaneously agree to use the same credit-card network.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018). Credit-card networks accordingly exhibit indirect network effects— “[a] credit card, for example, is more valuable to cardholders when more merchants accept it, and is more valuable to merchants when more cardholders use it.” *Id.* at 2281.
23. The parties’ economic experts agree that the App Store, like the credit-card networks in *Amex*, is a two-sided transaction platform. FOF ¶ 323.
24. Just like the credit-card networks in *Amex*, the App Store “cannot make a sale to one side of the platform without simultaneously making a sale to the other,” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018), because the App Store makes a “sale” to developers only when an app is distributed to consumers or consumers initiate a digital transaction on the app. In other words, the App Store “facilitate[s] a single, simultaneous transaction” between app developers, including game app developers, and iOS users. *Id.*; FOF ¶ 324. Those transactions are valuable for the App Store’s consumers, who obtain high-quality apps or in-app products, as well as for developers, who receive revenue or obtain wider distribution of their products. FOF ¶ 326.
25. The App Store also exhibits the “pronounced indirect networks effects” that *Amex* held are common to all two-sided transaction platforms—as more developers offer their apps through the App Store, the platform becomes more valuable to consumers, and vice versa. FOF ¶ 328. These indirect network effects are evident from Apple’s business model: Apple invests substantial resources to provide support to developers, including game app developers, to attract and retain them on the App Store ecosystem, while also ensuring that consumers remain satisfied by implementing processes to keep the apps on the App Store curated, secure, and safe. FOF ¶¶ 330, 334. And the App Store is characterized by interconnected pricing and demand, another feature of two-sided platforms. FOF ¶ 507.
26. Moreover, Apple is “sensitive to the prices that [it] charge[s] each side” of the App Store, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018), and encourages participation on the consumer side of the platform by making their use of the App Store free. Apple directly earns revenue through the App Store only from the developer side of the platform. Developers are free to select their own monetization strategy and pay Apple a commission only for particular transactions that are defined in advance. FOF ¶¶ 48.3–48.5; *cf. Amex*, 138 S. Ct. at 2288 (explaining that credit-card networks offer rewards to consumers and charge fees to merchants); *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019) (explaining that travel-booking platforms pay travel agents for each booking and collect booking fees from airlines).
27. The Court previously observed that market definition in this case turns in part on “the question of perspective,” and that “there are at least three possible perspectives on the relevant market: (1) the consumer who purchases the apps or games, (2) the developer who makes the apps or games, and (3) the competing app store or digital marketplace that distributes the apps or games.” Dkt. 118 at 20.

28. The question of perspective is informed by the Supreme Court’s instruction that competition on two-sided transaction platforms “cannot be accurately assessed by looking at only one side of the platform in isolation.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). “[A]s a matter of law,” therefore, “in a case brought under the Sherman Act that involves a ‘two-sided transaction platform,’ the relevant market must always include both sides of the platform.” *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019); *see Am. Express*, 138 S. Ct. at 2280–87, 2298 (stating that “in two-sided transaction markets, only one market should be defined,” even where the platform offers “different products or services to two different groups who both depend on the platform to intermediate between them” (quotation marks and alteration omitted)).
29. The perspective of a competing app store or digital marketplace may be helpful, in some contexts, to determine market definition. FOF ¶ 381. The fact that platforms monitor the business of their competitors suggests that those platforms understand that consumers see those competitors as substitutes. *Id.*
30. Accordingly, because the App Store is a two-sided transaction platform, in order to determine the scope of the relevant product market within which the App Store operates—that is, the kind of transactions relevant to this case—the Court must consider the perspectives of consumers and developers. This necessarily follows from *Amex*’s holding that “[e]valuating both sides of a two-sided transaction platform is . . . necessary to accurately assess competition.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

ii. The Relevant Product Market Is Digital Game Transactions

31. In its complaint, Epic has alleged two purportedly distinct product markets—the distribution of iOS apps and payment processing for iOS apps. Dkt. 1 ¶¶ 7, 10. As discussed below, these are not appropriate product markets as a matter of fact or law. There is only one relevant product market applicable to the claims asserted by Epic in this lawsuit: digital game transactions between game app developers and consumers of game app content (“digital game transactions,” in brief). FOF ¶ 342.
32. Because the App Store is a two-sided transaction platform, the relevant market “must . . . include both sides of the platform.” *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019). That means that the relevant product for Epic’s antitrust claims, and the product that must be evaluated for substitutability, is *transactions* through the App Store—not iOS devices or the App Store itself. And the product market must be tailored to Epic’s claims in this case. *See Moore v. James H. Matthews & Co.*, 550 F.2d 1207, 1218 (9th Cir. 1977). This framework imposes two important considerations for the relevant market: (1) the market must encompass platforms other than the App Store, and (2) the market must be focused on digital transactions for games, not other types of apps.
33. As set forth below, Epic ignores these considerations in proposing a product market that fails to take into account substitutability by consumers and developers. A product market definition that focuses solely on iOS is under-inclusive because it fails to account for the multiple platforms through which consumers play and developers make available digital game transactions. And a product market definition that focuses on all digital

transactions—without regard to subject matter or purpose—is over-inclusive because not all digital transactions are substitutable for one another. For example, a download of a yoga app is not a reasonable substitute for a purchase of in-game content on *Candy Crush Saga*. The relevant product market thus is digital game transactions across all competing platforms.

a. The Relevant Market Includes All Digital Transaction Platforms, Not Just iOS

34. The relevant market in this case must include digital transactions on other platforms, not just iOS.
35. The relevant market must include “all sellers or producers who have actual or potential ability to deprive each other of significant levels of business.” *Thurman Indus., Inc. v. Pay ‘N Pak Stores, Inc.*, 875 F.2d 1369, 1374 (9th Cir. 1989). Identifying such sellers or producers is critical, because “a threshold step in any antitrust case is to accurately define the relevant market, which refers to the area of effective competition.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) (quotation marks omitted).
36. In defining the relevant product market, the relevant inquiry is whether digital transactions on other platforms provide alternatives to the App Store, not whether consumers or developers prefer one platform over another. Courts have accordingly rejected product market definitions as unduly narrow where they are based on a particular mode of distributing a product. *See, e.g., Thurman Indus., Inc. v. Pay ‘N Pak Stores, Inc.*, 875 F.2d 1369, 1377 (9th Cir. 1989) (rejecting argument that goods and services sold at “home centers” comprise a separate product market because there was no evidence that “consumers are unwilling to patronize a variety of retailers other than home sellers” in satisfying their home improvement purchase needs); *Westman Comm’n Co. v. Hobart Int’l, Inc.*, 769 F.2d 1216, 1220–21 (10th Cir. 1986) (“[T]he fact that ‘one-stop distribution’ is an effective way or even superior way to compete does not mean that the relevant market is limited to those who use that method of competition.”). Thus, “the mere preference for one form of delivery over another does not create separate markets for the same product delivered one way as opposed to another.” *PepsiCo, Inc. v. Coca-Cola Co.*, 114 F. Supp. 2d 243, 250 (S.D.N.Y. 2000).
37. A product market that focuses solely on iOS without considering these other platforms is under-inclusive because it does not include all digital game transactions that are reasonably interchangeable to consumers and developers. *See, e.g., Big Bear Lodging Ass’n v. Snow Summit, Inc.*, 182 F.3d 1096, 1105 (9th Cir. 1999) (dismissing antitrust claim where the plaintiff failed to allege “there are no other goods or services that are reasonably interchangeable”); *Spindler v. Johnson & Johnson Corp.*, No. 10-CV-1414, 2011 WL 12557884, at *2 (N.D. Cal. Aug. 1, 2011) (the product market “must encompass the product at issue well as all economic substitutes for the product”).
38. Developers offer their apps and the associated in-game content across multiple transaction platforms, and consumers execute digital game transactions across multiple platforms, expanding the “area of effective competition” far beyond simply iOS. FOF ¶¶ 351–76.

Apple thus faces competition from the numerous alternative means of facilitating game transactions, all of which must be considered in defining the scope of the product market. This competition is apparent from both the consumer perspective and the developer perspective.

39. First, from the consumer perspective, the App Store competes with other game transaction platforms. Most modern smartphone users have access to a variety of different devices, such as laptops, desktop computers, tablets, smart TVs, and game consoles. FOF ¶¶ 358–62. These devices can each be used to access apps, and as particularly relevant here, to access game apps and engage in digital game transactions. FOF ¶ 363.
40. Indeed, consumers can choose which devices to use for playing games and making game app purchases depending on the situation. While an iPhone user is waiting for the bus in the morning, for example, she might decide to play a session of *Fortnite* on her phone for a few minutes. Or she might instead use a mobile gaming device (such as the Nintendo Switch) or a non-iOS tablet for the same purpose. That same iPhone user, arriving home at night, might choose to play *Fortnite* or *Halo* on a game console or PC—or she might purchase a new game altogether. She might choose instead to play *World of Warcraft* on her PC or buy some in-game currency. Or she might purchase some levels in *Candy Crush Saga* and play them on her iPhone. In all circumstances, Apple and the App Store have to compete with other game app platforms for consumer time and purchases.
41. A survey conducted by one of Apple’s experts revealed that many consumers of game apps do in fact own multiple devices and have access to multiple game platforms that are reasonably interchangeable. For instance, 81% of App Store users regularly use a device besides their iOS device, and 41% of them regularly use a game console or handheld game device. FOF ¶ 361. The same survey showed that, with respect to consumers who used iOS to play *Fortnite*, 94% regularly used or could have used game consoles or handheld game devices in the last twelve months. FOF ¶ 365. Epic’s user data demonstrates a similar point: between March 2018 and July 2020, 35.9% of users who played *Fortnite* on iOS devices also played *Fortnite* on another device. FOF ¶ 367.
42. Consumers do not just have access to multiple devices; they actually transact across those devices and platforms. [REDACTED]

[REDACTED]

Consumers also engage in *Fortnite* transactions across a number of platforms, with the PlayStation 4 generating 46.8% of total *Fortnite* revenues from March 2018 through July 2020 and Xbox One generating the second-highest share of revenues at 27.5%. FOF ¶ 369. iOS ranked fifth among all *Fortnite*-accessible platforms in terms of revenue, with just 7.0% of total revenue. *Id.*
43. The launch of *Fortnite* on the Nintendo Switch in June 2018 provides an illustrative case study of how consumers readily substitute between game transaction platforms. Apple’s expert, Professor Hitt, analyzed the dataset of consumers who, in June 2018, accessed *Fortnite* on both iOS and Nintendo Switch, and found that after the Nintendo Switch was

introduced in June 2018, there was significant decrease in the percentage of time these consumers spent playing *Fortnite* on iOS, as well as a significant percentage decrease in the revenue generated by these consumers through purchases made on iOS. FOF ¶¶ 373–74. These data demonstrate that consumers view the various game app platforms as substitutable, switching the platform through which they make purchases as new entrants join the market.

44. More recently, consumers are beginning to have new alternatives for digital transactions for game apps that do not even require access to a second device. Several online, cloud-based streaming game platforms have begun to emerge, including Google Stadia, Nvidia GeForce Now, PlayStation Now, Microsoft Xbox Cloud Gaming, and Amazon’s Luna. FOF ¶¶ 245–245.5. These platforms are accessible through a web browser (including, for example, Safari) and allow consumers to play games directly on the platform rather than downloading the game to a particular device. *Id.* *Fortnite* is expected to soon be available on Nvidia GeForce Now for iOS users, thus giving iOS users an alternative way to play *Fortnite* that does not require a second device. FOF ¶ 350.
45. It bears emphasis that the alternative of playing games through the Safari web browser has *always* been available to consumers. When the iPhone was first launched, Apple emphasized to developers that they could create web apps for consumers. FOF ¶¶ 28–28.4. Even today, Apple’s agreements remind developers that “there is always the open Internet.” FOF ¶ 529.2. Thus, no game app developer *must* go through the App Store in order to distribute game apps to iOS users, because all developers are free to offer their games as web apps, accessible through the Safari web browser.
46. *Second*, from the developer perspective, there also is robust competition with the App Store. Developers, similar to consumers, can choose to use many different platforms on many types of devices to distribute their apps. FOF ¶ 352. A large share of iOS developers, for instance, also create games for Google Play, and of the top 100 game apps by estimated revenue, *ninety-nine* appear on both platforms. *Id.* Game app developers also regularly distribute their apps through the Microsoft Store, Amazon App Store, Nintendo eShop, and PlayStation Store, or even through their own websites. FOF ¶ 353.
47. One reason for this developer cross-pollination is that developing games for a broad set of platforms has been made substantially easier by new technologies and evolving game developer tools. FOF ¶ 354. Epic itself distributes *Fortnite* on all the major game app platforms and apparently views the platforms as substitutable, because it has encouraged users who could no longer play on iOS following *Fortnite*’s removal from the App Store to play on other platforms. FOF ¶¶ 355–355.4. Epic has even benefited from the competition among game app platforms by, for example, obtaining marketing support from Apple that had benefits for its other platforms. FOF ¶ 356.
48. Competition for developers across platforms is evidenced by the fact that the highest commission rate Apple charges—30%—for digital game transactions matches the commission charged by the other major game app platforms. FOF ¶ 472. And, like Apple, many of the other platforms also offer discounts for subscriptions or small businesses, as Apple does. FOF ¶ 474. Google, for example, recently announced that it will charge a

15% commission for the first \$1 million in revenue that a developer makes, a similar policy to the one Apple adopted just months ago. FOF ¶ 166. Google's near-replication of a discount offered by Apple is clear evidence of competition for developers. Although Epic points to some small market outliers in an attempt to show that a 30% commission is supracompetitive, there is no serious question that the major platform operators who provide access to the largest number of consumers generally charge a base 30% commission (which Apple, in certain circumstances, reduces to 15%).

49. This cross-platform competition is apparent from the fact that *Fortnite* was successful long before it ever launched on iOS. FOF ¶ 355.1. And even as *Fortnite* continues to earn Epic billions of dollars each year, purchases on iOS comprise only a small fraction of the total amount of revenue *Fortnite* brings in—Epic is able to reach the majority of its existing customer base through platforms other than the App Store. FOF ¶ 369. Even after its removal from the App Store, *Fortnite* still offers a highly profitable revenue stream for Epic. FOF ¶ 517.2. Thus, even as it claims in this lawsuit that the App Store constitutes its own discrete market, Epic has long treated the App Store as but one of several alternative means through which users can download *Fortnite* and play with their friends across a multitude of platforms.
50. Developers can and do make decisions about which platform(s) to distribute their apps through and are sensitive to factors such as the commission rate on the platform, the technical capabilities of the device(s) on which a platform is available, the available developer tools, the number of consumers on the platform, the amount consumers on that platform are expected to spend, and other services offered by the platform. And even if developers do not move entirely away from a platform based on these factors, they may allocate marketing and game development efforts across platforms differently based on these factors. Indeed, Epic has done just that, focusing first on its *Fortnite* iOS launch before devoting resources to the launch of *Fortnite* on Android. FOF ¶ 382.
51. Epic's implementation of Project Liberty demonstrates the competition for developers. Epic executed Project Liberty knowing that it would likely lead to *Fortnite*'s removal from the App Store, and Epic's co-founder has acknowledged as much in this litigation. FOF ¶ 294. Yet Epic went forward anyway, despite the fact that nothing would have stopped it from bringing this lawsuit while remaining in compliance with the DPLA and keeping *Fortnite* on the App Store. And after *Fortnite* was removed from the App Store (as Epic knew it would be), Epic ran advertisements explaining that iOS *Fortnite* players could move to other platforms to continue playing the latest version of *Fortnite*. FOF ¶ 304. Epic's own conduct thus demonstrates that it views iOS as interchangeable with other platforms—it would rather not be on the App Store at all and earn no revenue, than be on the App Store and pay Apple a 30% commission.
52. Moreover, many developers—including Epic—specifically develop their games to be compatible across platforms and enable cross-platform play. FOF ¶¶ 165.1, 249.2. That means that a player who downloads a game like *Fortnite* on his iPhone and creates an account can also play using that same account (and all of the features purchased or unlocked for that account) on any other platform to which he has access. FOF ¶¶ 249.2, 255.1. Thus, if a user has already downloaded a game on his iPhone, Apple still must

compete with other platforms in terms of persuading that consumer to use the App Store—as opposed to the numerous other game app platforms—to make purchases that will enhance the user’s playing experience across all platforms. This competition is effective in part because, as noted above, most iOS users already have access to other devices. FOF ¶ 358.

53. Epic has maximized this cross-elasticity through the concept of a “cross-wallet.” FOF ¶¶ 367–415. Not only can *Fortnite* players use the features and upgrades they purchase on one platform for play on other platforms too, but they also can purchase Epic’s “currency”—V-Bucks—on one platform and use them on another. FOF ¶ 367. And in fact, an iOS *Fortnite* player does not even have to have access to anything other than an iPhone to utilize this cross-wallet feature—the player can navigate to EGS on Safari and purchase V-Bucks directly from Epic, then use those V-Bucks on his iOS *Fortnite* game to buy in-game features and upgrades without ever transacting through Apple. *Id.*
54. *Third*, the perspective of market participants also supports this market definition. Apple views the App Store as competing directly with other game transaction platforms—like Google Play, the Nintendo eShop, and Steam—for both consumers and developers. FOF ¶¶ 379–80. For instance, a 2017 Apple presentation identified Google Play as a competitor. FOF ¶ 238. And in 2009, Apple executives discussed the PSP Go (a mobile console) as a “key competitor” to the iPhone. FOF ¶ 240. This focus is reflective of the fact that consumers see the App Store as reasonably interchangeable with other transaction platforms.
55. Once Apple introduces evidence of interchangeability—as it has done here—it is Epic’s burden to “rebut” that showing with evidence demonstrating that the products are not interchangeable. *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978); *see also United States v. Sabre*, 452 F. Supp. 3d 97, 142 (D. Del. 2020) (noting that where the defendant has introduced evidence that a product should be part of the relevant market, “the burden is on the [plaintiff] to show that [that product] is *not* part of the relevant . . . market” (emphasis added)).
56. That is because market definition is an element of Epic’s claims, and as a matter of law, the relevant product market “must encompass the product at issue as well as all economic substitutes for the product.” *Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008); *see also Pistacchio v. Apple Inc.*, No. 20-CV-7034, 2021 WL 949422, at *1 (N.D. Cal. Mar. 11, 2021) (same). “Including economic substitutes ensures that the relevant product market encompasses the group or groups of sellers or producers who have actual or potential ability to deprive each other of significant levels of business.” *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018) (quotation marks omitted).
57. Where a “plaintiff fails to define its proposed relevant market with reference to the rule of reasonable interchangeability and cross-elasticity of demand . . . the relevant market is legally insufficient.” *Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir. 1997).

58. If Epic cannot rebut the evidence showing that other transaction platforms are reasonably interchangeable with the App Store, then any market definition in this case that excludes those platforms is “legally insufficient.” *Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir. 1997). Indeed, this Court has recently recognized in a related antitrust suit against Apple that a plaintiff’s claim must fail if it has not demonstrated “that there are *not* appropriate economic substitutes.” *Pistacchio v. Apple Inc.*, No. 20-CV-7034-YGR, ECF No. 61, at 3 (N.D. Cal. Mar. 11, 2021).
59. Epic has not rebutted the evidence showing that transactions executed on other platforms are reasonably interchangeable with those executed on the App Store. The fact there are minor differences between various platforms—for example, some are for mobile use, and some allow for higher graphics quality—is not sufficient to rebut the substantial evidence of interchangeability of transactions among those platforms. Some platforms—Android app stores, non-iOS tablets, and the Nintendo eShop for the Nintendo Switch—are for mobile use and thus transactions executed on those platforms are clearly interchangeable with those on the App Store. Other platforms—non-portable game consoles and PCs, including Macs—do not offer transactions for execution on mobile devices but offer other advantages to consumers, and thus transactions executed on those platforms also are economic substitutes for digital game transactions on iOS. And the new online game streaming services described above promise to provide additional substitutes, including for iOS users.
60. Minor differentials in price or latency, or an additional step to access (such as having to subscribe to a service) does not mean a product is not interchangeable. Even “significant price differences do not always indicate distinct markets.” *AD/SAT, Div. of Skylight, Inc. v. Associated Press*, 181 F.3d 216, 228 (2d Cir. 1999); *see also Allen-Myland, Inc. v. Int’l Bus. Machs. Corp.*, 33 F.3d 194, 206 (3d Cir. 1994) (“Interchangeability implies that one product is roughly equivalent to another for the use to which it is put; while there may be some degree of preference for the one over the other, either would work effectively.”); 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 562c (4th ed. 2020 supp.) (“Products can be near-perfect substitutes even when their prices or qualities differ.”); Trial Tr. 2296:24–2297:2 (Cragg) (Dr. Cragg conceding that products do not need to be perfect substitutes to be in the same market). There is no evidence here of an even a moderate price difference, left along a significant one, among the numerous alternative platforms for digital game transactions.
61. Far from showing an absence of interchangeability, the evidence demonstrates that competition is working precisely as economic principles anticipate. Apple removed *Fortnite* from the App Store in August 2020 because of Epic’s willful breach. FOF ¶ 301. By the time trial in this case begins, Nvidia GeForce Now expects to make *Fortnite* available to all iOS users *on their iOS* devices via its online game streaming service. FOF ¶ 350. In just a few months, the market has already reacted to the removal of *Fortnite* from the App Store and developed an alternative, confirming that the market, and not the judiciary, is the best mechanism to provide consumers alternatives to the App Store.
62. That web apps may be less convenient in some respects or that some consumers might prefer to play games on a portable device rather than on a PC is irrelevant. “[W]here there

are market alternatives that buyers may readily use for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others. If it were not so, only physically identical products would be a part of the market.” *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 394 (1956). What matters is whether consumers have alternatives to the narrower product market the plaintiff seeks to define, and the undisputed evidence here shows that they do. Epic has failed to “carr[y] the burden of proving that no . . . substitutes are available.” *Rodney v. Nw. Airlines, Inc.*, 146 F. App’x 783, 787 (6th Cir. 2005).

63. Accordingly, the product market here extends to all transaction platforms that facilitate digital transactions between developers and consumers of game apps.

b. The Relevant Market Is Limited to Digital Transactions for Games

64. The product market must be defined as *game* transactions, not all app transactions.
65. “The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.” *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Where products are not interchangeable, they are not part of the same product market. *See, e.g., Golden Gate Pharmacy Servs., Inc. v. Pfizer*, 433 F. App’x 598, 599 (9th Cir. 2011) (holding that the “pharmaceutical industry” was not a relevant product market because there were no facts alleged showing that all pharmaceutical products were interchangeable).
66. The principal complaint by the sole plaintiff in this lawsuit (Epic Games, Inc.) is *its* purported inability to reach iOS users with its products, i.e., *Fortnite* and other game apps, and the relevant market thus is appropriately defined is digital transactions for game apps. Epic is a developer of game apps, FOF ¶ 248, and the antitrust claims it asserts focus almost exclusively on *Fortnite* (a game), Dkt. 1 ¶ 16, and the Epic Games Store, described by Epic as “a digital video game storefront through which gamers can download various games, some developed by Epic, and many offered by third-party game developers,” *id.* ¶ 27. The outer boundaries of the product market in this case are clear, and stop at the edges of the game app transaction market. There is no evidence that digital transactions in game apps are interchangeable with digital transactions in non-game apps. FOF ¶¶ 343–50. To the contrary, game apps are a discrete subset of the wide variety of apps offered by Apple through the App Store, and they generally are not substitutable with other apps.
67. From the consumer perspective, transactions in game apps are interchangeable with other digital game transactions, but not with (for example) transactions in weather or news apps. FOF ¶ 345. Game apps are even segregated on platforms like the App Store from other apps, usually in a standalone “Games” tab, to cater to consumers who are interested in using the App Store for games. FOF ¶¶ 344.1–344.3. Moreover, there are specialized marketplaces for games and game transactions, some of which reside on special devices. FOF ¶ 349. Some platforms—like the Sony PlayStation and its PlayStation Store, or Valve and Steam for desktops/laptops—focus exclusively on games and game transactions. FOF ¶¶ 349–349.3. A consumer dissatisfied with his experience on the App Store thus can turn

to these other platforms to seek out an alternative digital-transaction experience for game apps, but cannot use those same alternatives for other types of apps. Accordingly, digital game transactions have “characteristics peculiar to [them] rendering [them] generally noncompetitive” with other app transactions. *Brown Shoe Co. v. United States*, 370 U.S. 294, 326 (1962).

68. From the developer perspective, developers that develop game apps, including Epic itself, tend to specialize in the development of game apps, not apps in general. FOF ¶ 347. Developers that develop game apps for the App Store derive over 88% of their revenue from the App Store from game apps that they distribute, meaning that less than 12% of their revenue comes from other, non-game apps. *Id.* At the same time, non-game apps may be subject to other new technologies, such as wearable devices (e.g., Fitbit), that may not affect game apps. FOF ¶ 350.
69. Epic’s expert incorrectly contends that Apple has focused exclusively on the fact that the plaintiff here, Epic, is in the business of game apps as the basis for Apple’s definition of the market. In fact, Apple has *not* centered its market definition on Epic. Rather, Apple has analyzed the interchangeability of digital game transactions with transactions for other types of apps, and analyzed the relevant market characteristics. Epic ignores the many reasons why digital game transactions on iOS are economically interchangeable with other digital game transactions, but not with transactions for other apps, all detailed above.
70. In any event, market definition must be tailored to the legal claims raised by the plaintiff. *See* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 533c (4th ed. 2020 supp.) (a market must be “relevant to the particular legal issue being litigated”). In *Amex*, for example, the relevant market was the two-sided market for credit-card transactions, because the plaintiffs alleged that Amex had unreasonably restrained trade *in that market* to better compete against other credit card companies. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). But of course credit card companies also compete with banks that issue credit cards—credit card companies want their consumers to purchase goods and services on credit rather than through a bank-issued debit card, and have to therefore offer competitive incentives to encourage consumers to do so. In a different case, thus, the relevant market might be defined more broadly. *See also* 5C Areeda & Hovenkamp, *supra*, ¶ 533c (explaining that various markets “may be relevant to the consideration of *some* antitrust violation, but the court must choose one or the other judge” the case at hand).
71. It is legally irrelevant to market definition that Epic’s affiliates offer products and services other than game apps (or a game app store). For example, Epic Games International S.à.r.l. (“Epic International”) produces Unreal Engine, a graphics engine that Epic International licenses to other developers for use in creating games, videos, and animations. FOF ¶ 250. But Epic International is not a plaintiff in this lawsuit, and therefore its products (and the markets in which they compete) are irrelevant. Moreover, Unreal Engine is not an app of *any* kind, and Epic has never sought to distribute it to iOS users through the App Store or otherwise. It is a software tool that developers use (and pay Epic International a license fee for using) to develop their own products. *Id.*; *see also infra* § III.D.i (¶¶ 544–53). A parent company’s injuries are ultimately “derivative of those suffered by [its] subsidiaries,”

and provide no causal link between the defendants' acts and the parent's injury. *Sun Microsystems, Inc. v. Hynix Semiconductor, Inc.*, 608 F. Supp. 2d 1166, 1190 (N.D. Cal. 2009). Courts have repeatedly declined to extend the "single enterprise" theory for antitrust defendants announced by the Supreme Court in *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 771 (1984) to parent companies attempting to sue for injuries to their subsidiaries. See, e.g., *In re Domestic Drywall Antitrust Litig.*, No. 15-CV-1752, 2019 WL 3098913, at *5–6 (E.D. Pa. July 15, 2009); *Sun Microsystems*, 608 F. Supp. 2d at 1186.

72. A different plaintiff facing a different type of competitive injury may very well (appropriately) allege a different type of market. And a government plaintiff may proceed under a broader market in an effort to combat *all* alleged anticompetitive effects, or may offer several alternative markets. But Epic's claims—the only claims at issue in this suit—are focused on the competitive injury to Epic and its consumers, and what Epic complains about is the allegedly anticompetitive effects of Apple's conduct on its ability to distribute its *games* (in particular, *Fortnite*) to iOS users, and its ability to execute digital transactions for those users.
73. Epic's contention that this approach is unworkable and arbitrary is incorrect—Epic brings this suit in its own capacity, not as part of a class action (which it opted out of) or as a representative of the public interest. Epic can thus assert only harm accruing to *it*, not to the market participants. Epic "lack[s] standing to seek—and the district court therefore lacks authority to grant—relief that benefits third parties." *McKenzie v. City of Chicago*, 118 F.3d 552, 555 (7th Cir. 1997). If there is competition with respect to the market in which Epic operates (i.e., digital game transactions), then Epic has suffered no antitrust injury—whether or not there is a lack of competition in some other market.

c. Epic Has Failed to Prove a Single Market for "iOS App Distribution"

74. Epic's proposed market definition of a single market for "iOS App Distribution" rests on the counterfactual that game and non-game digital transactions face similar competitive conditions.
75. The technical term for what Epic attempting to do is "clustering," in which two distinct product markets facing similar "competitive conditions" may be analyzed together as a matter of "administrative convenience." *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 565–66 (6th Cir. 2014) (quotation marks omitted). "The rationale for clustering nonsubstitutable goods into a single market must be regarded as a severe exception to ordinary market definition criteria, which define markets in terms of substitutability." 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.)
76. Epic's expert, Dr. Evans, has disclaimed any attempt to define a cluster market. Nor could Epic establish that digital game transactions and other types of digital transactions should be "clustered" for analytical purposes. See generally, Herbert Hovenkamp, *Digital Cluster Markets* (Working Paper 2021), <https://ssrn.com/abstract=3820062>.

77. The “critical question that must be answered when determining whether a particular product should be included in a cluster market” is: “are the items subject to the same competitive conditions?” *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 123 (D.D.C. 2016). “Most fundamentally, goods cannot be clustered unless there is a sufficient basis for inferring that the defendant has the required degree of market power *over each of the goods in the cluster*.” 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.) (emphasis added). For example, in *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963), the Supreme Court held that certain commercial banking services could be clustered for analytical purposes, but only after independently analyzing each service’s lack of interchangeability with comparable non-bank offering. *See id.* at 356–57. That is the standard Epic would have to satisfy in order to justify a clustered market encompassing both game and non-game digital transactions.
78. Game and non-game digital transactions cannot be clustered in the same relevant market because the competitive alternatives available to game developers and consumers who engage in digital game transactions are from those available to other app developers and consumers. As the evidence demonstrates, a consumer who wishes to execute digital game transactions can do so on many different platforms. FOF ¶¶ 358–63. And as discussed above, *see supra* § II.B.ii.b (¶ 67), games are recognized by transaction platforms as a discrete type of offering, usually listed under a separate tab. There are many differences between game and non-game transactions, explored below, that make clustering inappropriate.
79. Importantly, “[t]he rationale for clustering should . . . disappear[] as soon as it [is] clear that the defendant’s market position varie[s] from item to item in the proposed cluster.” 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.). And here, the evidence shows more than good reason for doubting that competitive conditions for digital game transactions and other digital transactions are similar.

iii. The App Store Does Not Constitute a Single-Brand Aftermarket

80. In its Complaint, Epic proposed two variants of an iOS-only market: (1) the “iOS App Distribution Market” and the “iOS In-App Payment Processing Market.” Dkt. 1 ¶¶ 51–57, 109–18. As the Court has previously recognized, “[c]ourts have expressly cautioned against such a narrowing of the relevant market definition.” Dkt. 118 at 16 (citing *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 392–93 (1956)).
81. Following entry of the preliminary injunction order, Epic altered its proposed product market definition. Without seeking leave to amend its Complaint, Epic contended (through service of an expert report) that smartphone operating systems (like iOS and Android) compete in a “foremarket,” and that consumers are thereafter locked into an “aftermarket” for the distribution of apps through each of those operating systems.

82. Epic did not allege in its Complaint the existence of a “foremarket” for operating systems or an “aftermarket” for app distribution services. *See generally* Dkt. 1. Indeed, neither of those terms appears anywhere in its Complaint.
83. A plaintiff’s failure to plead a cognizable market is a legal defect that justifies dismissal. *See Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 436–37 (3d Cir. 1997). The Court would be justified in simply disregarding Epic’s new “aftermarket” theory as improperly pleaded and dismissing the case for failure to plead a cognizable market. *See* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 531f (4th ed. 2020 supp.) (“If an antitrust complaint requires proof of a relevant market the plaintiff must allege such a market in its complaint . . .”).
84. The “aftermarket” theory was surfaced by Epic for the first time in an expert report served (but not filed with the Court) on February 16, 2021. Expert discovery closed on March 31, 2021, and Apple filed its proposed findings of fact and conclusions of law a week later, on April 7, 2021. Apple timely objected to Epic’s new “aftermarket” theory of market definition as beyond the pleadings in its Proposed Conclusions of Law. *See* Fed. R. Civ. P. 15(a).⁴
85. Epic never sought leave to amend its complaint to plead a new theory of market definition. On the contrary, Epic expressly represented to the Court that it would *not* be amending its complaint. *See* Hr’g Tr. 8:14 (Sept. 28, 2020).
86. Epic had ample time to develop its legal theories before filing its Complaint. As explained further below, Epic commenced “Project Liberty” in 2019, and retained the law firm of Cravath, Swaine & Moore at that time. FOF ¶ 272. Epic thereafter instituted a coordinated legal, marketing, and public relations campaign culminating with the triggering of the “hotfix” in July 2020 and the filing of the Complaint in this action immediately thereafter. FOF ¶¶ 274–300.
87. In these circumstances, there is no basis for allowing Epic to amend its Complaint to include new theories of market definition. Rather, Epic must proceed to trial on the market definitions it proposed in its Complaint. As noted, there is no “aftermarket” theory pleaded in the Complaint, and Epic has failed entirely to prove the theory of market definition it *did* offer in the Complaint. All of its claims fail for that reason alone.
88. Even if the Court were inclined to allow Epic to amend its Complaint at this late date, and literally on the eve of trial, such an amendment would be futile because Epic’s aftermarket theory is untenable as a matter of law, as explained below.
89. Epic attempts to fit its market definition into the facts presented in *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992), claiming there is a foremarket for iOS operating systems and an aftermarket for iOS App Distribution. But, as explained below,

⁴ The Court directed the parties not to file motions in limine before trial. Hr’g Tr. 18:2 (Mar. 1, 2021).

Epic’s reliance on *Kodak* disregards the nature of the two-sided transaction platform that all parties agree is at issue here and seeks to extend the limited circumstances presented in *Kodak* in ways no court has sanctioned before.

90. Epic’s decision to rest its entire case on a single-brand aftermarket theory amounts to an implicit concession that well-established, mainstream principles of antitrust law do not support Epic’s proposed market definition. Rather, Epic must rely on exceptions upon exceptions, seeking refuge in the smallest and furthest corners of antitrust law, and pushing the boundaries of market definition far beyond what prior cases have accepted. If Epic cannot prevail on its new “aftermarket” theory, all of its claims are barred at the threshold of proving a cognizable market definition. And Epic cannot prevail on that theory.

a. There Is No Relevant or Cognizable Foremarket

91. Any foremarket for smartphone operating systems is irrelevant. Epic agrees that the App Store constitutes a two-sided transaction platform, and the Supreme Court has directed that two-sided transaction platforms must be understood as “supplying only one product—transactions.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 n.8 (2018). The relevant question is thus not whether other devices are functionally equivalent to an iPhone (or offer an operating system functionality equivalent to that of iOS), but rather whether other platforms are reasonably interchangeable for the product at issue, that is, digital transactions for game apps. As set forth above, other platforms do act as substitutes for the App Store in the facilitation of digital transactions for game apps. Substitution of the physical device through which these platforms can be accessed is irrelevant because, as noted above, the great majority of iOS users actually have access to multiple devices that offer a variety of alternative platforms for digital transactions. FOF ¶¶ 358–63.
92. Moreover, there is no foremarket for smartphone operating systems. Apple does not sell “smartphone operating systems.” FOF ¶ 393. Rather, it sells devices—like the iPhone and the iPad—that run on the proprietary iOS operating system and include many integrated features, such as the App Store. *Id.* As relevant here, there is no market in which consumers can purchase iOS for use on other devices—neither consumers nor developers pay an explicit price for operating systems, as Dr. Evans concedes. FOF ¶ 394.
93. There is vigorous competition in the market for smartphones, which is what Apple actually sells. FOF ¶ 394.2. Dr. Evans’ attempt to artificially separate devices and operating systems ignores the market reality that when consumers purchase mobile devices, such as an iOS device or a Samsung device, they receive the entire bundle associated with the devices, including an operating system like iOS or Android. FOF ¶ 393.
94. Even if operating systems could constitute a foremarket, Epic’s market definition is too narrow because it excludes operating systems for tablets. FOF ¶ 395. Both iPhones and iPads use the App Store to facilitate digital transactions. *Id.* Developers who want to distribute apps through the App Store can use the same tools to create apps for iPhones and iPads, and most apps on the App Store can be downloaded on either an iPhone or an iPad. *Id.* Epic’s erroneous omission of tablets is significant because there are many operating

systems available for tablets besides iOS and Android. FOF ¶ 242. Thus Epic’s “duopoly” theory has no merit, even on its own terms.

b. iOS App Distribution Does Not Constitute a Single-Brand Aftermarket

95. Even if operating systems constituted a cognizable foremarket, Epic’s single-brand aftermarket for distribution of iOS apps is legally untenable.
96. The Supreme Court has stated that “in some instances one brand of a product can constitute a separate market.” *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 482 (1992). But those circumstances are exceedingly limited—“[i]n general, a manufacturer’s own products do not themselves comprise a relevant product market. . . . [A] company does not violate the Sherman Act by virtue of the natural monopoly it holds over its own product.” *Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008) (quotation marks omitted). Indeed, “[a] single brand is *never* a relevant market when the underlying product is fungible.” 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 563d (4th ed. 2020 supp.).
97. In fact, “[i]t is an understatement to say that single-brand markets are disfavored. From nearly the inception of modern antitrust law, the Supreme Court has expressed skepticism of single-brand markets.” *In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 343 (E.D.N.Y. 2019); *see also Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008) (“Even where brand loyalty is intense, courts reject the argument that a single branded product constitutes a relevant market.” (quotation marks omitted)); Herbert J. Hovenkamp, *Markets in IP & Antitrust*, 100 Geo. L.J. 2133, 2137 (2012) (“[A]ntitrust law has found that a single firm’s brand constitutes a relevant market in only a few situations.”).
98. Epic’s economic expert contends that the skepticism of single-brand markets is irrelevant here because economists generally do not encounter the facts of this particular case. That is a false tautology. *Every* case presents unique facts, but that does not alter the *legal* principle that there is a “heavy presumption” against single-brand markets, or that plaintiffs must prove “exceptional market conditions” in order to establish a single-brand market. *In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 343 (E.D.N.Y. 2019) (quoting *Domed Stadium Hotel, Inc. v. Holiday Inns, Inc.*, 732 F.2d 480, 488 (5th Cir. 1984)).
99. A single-brand market may be plausible in a derivative “aftermarket” in which customers were not informed about restrictive policies at the time they purchased the product from the primary market or were subject to post-purchase policy changes that limited their options in the aftermarket. *See Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 464–78 (1992).
100. As a matter of law, however, an “antitrust plaintiff *cannot succeed* on a Kodak-type [single-brand-aftermarket] theory when the defendant has not changed its policy after locking-in some of its customers, and the defendant has been otherwise forthcoming about its pricing

structure and service policies.” *PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 820 (6th Cir. 1997) (emphasis added); *see also, e.g., Avaya Inc., RP v. Telecom Labs, Inc.*, 838 F.3d 354, 405 (3d Cir. 2016) (no *Kodak*-type aftermarket “when customers were put on clear notice that purchasing [defendant’s product] precluded use of [third-party] maintenance”); *DSM Desotech, Inc. v. 3D Sys. Corp.*, 749 F.3d 1332, 1346 (Fed. Cir. 2014) (“[I]t is only the customers who learned about the [allegedly anticompetitive policy] after purchasing their equipment that are relevant to the ‘locked-in’ analysis.”); *SMS Sys. Maint. Servs., Inc. v. Digital Equip. Corp.*, 188 F.3d 11, 19 (1st Cir. 1999) (concluding that “the easy availability of information” and “purely prospective nature” of an allegedly anticompetitive policy “take [a] case out of *Kodak*’s precedential orbit”); *United Farmers Ass’n, Inc. v. Farmers Ins. Exch.*, 89 F.3d 233, 238 (5th Cir. 1996) (rejecting claim that insurance agents were “locked-in” to a particular insurance company because the agents “would clearly have become aware of [the alleged anticompetitive] policy long before they faced significant switching costs”); *Teradata Corp. v. SAP SE*, No. 18-CV-03670, 2018 WL 6528009, at *16 (N.D. Cal. Dec. 12, 2018) (single-brand markets are possible only in situations in which customers face “restrictions that were undisclosed at the time of the purchase of the product from the primary market”).

101. Another court in this District has accurately explained that “to establish a single-brand aftermarket under *Kodak* and [*Newcal Indus., Inc. v. IKON Office Solution*, 513 F.3d 1038 (9th Cir. 2008)], the restriction in the aftermarket *must not have been* sufficiently disclosed to consumers in advance to enable them to bind themselves to the restriction knowingly and voluntarily.” *Datel Holdings Ltd. v. Microsoft Corp.*, 712 F. Supp. 2d 974, 987 (N.D. Cal. 2010) (emphasis added).
102. The assessment of a single-brand market involving two-sided transaction platforms must take into account interchangeability and the viability of switching on both sides of the platforms. *See In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 344–45 (E.D.N.Y. 2019) (assessing interchangeability from the perspective of both merchants and cardholders); *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 n.2, 2282, 2287 (2018) (defining the relevant market to include all credit card transactions despite observing, for example, that not all consumers own credit cards from all brands and “only a small number of Visa and Master Card cardholders have an Amex”).
103. iOS app distribution does not constitute a single-brand aftermarket.
104. *First*, there has been no material change in the conditions for accessing the App Store for either side of the platform. This is a *legal* requirement for any theory of a single-brand aftermarket. Failure to show a change in policy following lock-in—which does not exist either—is fatal to Epic’s aftermarket theory. *See PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 820 (6th Cir. 1997).
105. For consumers, iOS has always been a closed system, and the App Store has been a “walled garden” with respect to native apps from its inception. FOF ¶ 396. Yet consumers have always had (and continue to have) the ability to use web apps through their Internet browser, forgoing the App Store altogether, and that feature is becoming increasingly more

attractive for some developers. FOF ¶ 400. Moreover, extensive information about gaming options, including on iOS, is easily accessible to consumers online. FOF ¶ 396.

106. For developers, Apple’s terms have been consistently and clearly communicated through the DPLA, a comprehensive and transparent licensing agreement that sets out in minute detail the terms under which developers may use Apple’s intellectual property. FOF ¶ 406. Any changes to the DPLA since its creation have been *pro*-developer: for example, in 2016, Apple announced that the commission on subscription renewals after one year would be reduced to 15%, and in 2020 announced that the commission for small app developers would likewise be reduced to 15%. FOF ¶¶ 161.2, 166. It is thus “clear [that developers] knowingly and voluntarily signed [the DPLA] in which they agreed to bind themselves” to Apple’s policies. *W. L.A. Pizza, Inc. v. Domino’s Pizza, Inc.*, No. 07-CV-7484, 2008 WL 11424181, at *7 (C.D. Cal. Feb. 26, 2008).
107. *Second*, there is no lock-in of customers. The App Store competes against many other game app platforms for both consumers and developers in the market for digital game transactions. *See supra* § II.B.ii.a (¶¶ 34–64). As explained above, many consumers already have access to alternative platforms through which they can purchase and play games, and many consumers actually *do* use those alternative platforms to play games like *Fortnite*. FOF ¶¶ 358–63.
108. Moreover, cross-platform games like *Fortnite* offered on a variety of platforms are becoming increasingly prevalent, and they make switching between platforms seamless because a consumer can carry over all of her rewards and progress between platforms. FOF ¶ 255.1. Likewise, most developers who distribute their games through the App Store also develop and distribute games through other platforms, making those platforms a viable alternative for consumers who, for whatever reason, desire to switch from the App Store. FOF ¶¶ 351–52. As a result, neither consumers nor developers are “locked in” to the App Store—they can and do pursue game transactions on a variety of other platforms.
109. Epic thus has established neither of the two legal elements of an aftermarket, and it therefore has failed to meet its burden to prove the relevant market. For that reason alone, Epic’s claims fail.
110. Indeed, if Epic’s foremarket-aftermarket approach were accepted, every game console manufacturer (including Microsoft, Sony, and Nintendo) would be considered a monopolist for digital game transactions on their own platforms. Game console manufacturers, like Apple, impose restrictions designed to ensure that all purchases of apps and in-app upgrades for their platforms go through their proprietary application transaction platforms. FOF ¶ 534. And a consumer who purchases a game console incurs a substantial upfront cost and will face some costs associated with purchasing a new game console if she wants to move platforms. *See* Jonathon Dornbush & Jordan Sirani, *Update: Comparing the Price of Every Game Console, with Inflation*, IGN (Sept. 18, 2020), <https://perma.cc/B62Y-KPS5>. Yet Epic does not claim that every game console manufacturer has unlawfully created and maintained a monopoly, and in fact, appears content to offer *Fortnite* and other Epic games on those platforms without complaint. Trial Tr. 1903:17–1904:18 (Schmalensee).

111. Epic’s aftermarket approach to market definition also is inconsistent with its recognition that the App Store constitutes a two-sided transaction platform. As Epic’s expert, Dr. Evans, states: “app stores, which are online marketplaces, are two-sided platforms with indirect effects; meet the economic definition of transaction platforms; and . . . sound economic analysis needs to consider both users and developers and the interdependencies.” Yet Epic does not actually follow through and analyze the App Store as a two-sided transaction platform, as required by law. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). Instead, Epic and Dr. Evans analyze each side of the App Store *individually*, thus failing to account for the indirect network effects that characterize two-sided transaction platforms. FOF ¶¶ 423–24. This analytical error infects all of Epic’s aftermarket analysis, thus rendering Epic’s proposed aftermarket defective as a matter of law.
112. Because it is *Epic’s* burden to establish the market definition, and it has failed to do so, all of Epic’s claims fail for that reason alone.

iv. The Hypothetical Monopolist Test Does Not Support Epic’s Market Definition

113. Largely disregarding the legal standards outlined above, Epic invokes the “hypothetical monopolist test” set forth in the federal agencies’ horizontal merger guidelines as support for its legally defective market definition. The test does not apply to Epic’s claims and, even if it did, it does not support Epic’s market definition.

a. The Hypothetical Monopolist Test Cannot Apply Here as a Matter of Law

114. The hypothetical monopolist test is an inappropriate and unworkable method for determining the relevant market in the context of monopolization claims involving a two-sided transaction platform such as the App Store. Accordingly, Epic cannot rely on the hypothetical monopolist test to support its single-brand market theory.
115. Under the hypothetical monopolist test, courts “ask[] whether a monopolist in the proposed market could profitably impose a small but significant nontransitory price increase [‘SSNIP’].” *Theme Promotions, Inc. v. News Am. Mktg. FSI*, 546 F.3d 991, 1002 (9th Cir. 2008). If enough “customers would respond to a SSNIP by purchasing substitute products, the SSNIP would not be profitable”; and where the SSNIP would not be profitable, “the market definition should be expanded to include those substitute products that constrain the monopolist’s pricing.” *Id.*
116. The hypothetical monopolist test is set forth in the federal antitrust enforcers’ “Horizontal Merger Guidelines,” which provides information regarding the Justice Department’s approach to mergers that raise competition issues under Section 7 of the Clayton Act (15 U.S.C. § 18). U.S. Dep’t of Justice & Fed. Trade Comm’n, *Horizontal Merger Guidelines* § 4.1.1 (2010). The guidelines themselves “are not binding on the courts.” *Olin Corp. v. FTC*, 986 F.2d 1295, 1300 (9th Cir. 1993). On its own terms, the hypothetical monopolist test applies only to mergers, and that is the context in which it is most often deployed. *See, e.g., Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke’s Health Sys., Ltd.*, 778 F.3d 775, 783–84 (9th Cir. 2015) (analyzing market definition for challenge to merger under Section

7 of the Clayton Act); *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098, 1111–12 (N.D. Cal. 2004) (same).

117. The hypothetical monopolist test does not apply to monopolization claims involving two-sided transaction platforms. The hypothetical monopolist test, “as it is usually conceived,” makes no sense when applied to two-sided transaction platforms, because there are *two* prices that must be considered, one on each side of the platform. See Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 330 (2014). There is thus a “consensus in the literature” that, if it is to be applied at all, the test would have to be modified to “take into account changes in profits on both sides of the market and all feedback between demands on the two sides.” *Id.* at 331.
118. The danger of applying the hypothetical monopolist test in the context of two-sided transaction platforms arises in part from the existence of indirect network effects, which require the analysis to take into account the fact that a price increase on one side of the platform and resulting departure of users will cause a corresponding departure of users on the other side. See Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 331 (2014).
119. Epic’s own expert—Dr. Evans—has warned against this very shortcoming. As he stated in a 2008 article, “[t]he standard tools of antitrust and merger analysis, which were developed based on the economics of single-sided businesses, do not necessarily apply in ways that are material to the analysis of competition that involves multisided businesses.” David S. Evans & Michael D. Noel, *The Analysis of Mergers that Involve Multisided Platform Businesses*, 4 J. Competition L. & Econ. 663, 664 (2008). Dr. Evans went on to explain that the hypothetical monopolist test “for defining a relevant market *does not apply* without *significant modifications*” to multisided businesses. *Id.* at 667 (emphasis added). That is because by imposing a SSNIP on side A, and “ignoring side B, the analyst fails to consider that the hypothetical price increase reduces the number of side A customers available to side B, which thereby reduces the prices that side B customers will pay, and furthermore reduces the number of side B customers available to side A, which in turn reduces the prices that side A customers will pay.” *Id.* As a result, traditional application of the test to only one side of a two-sided platform would define the market “too narrowly,” with “estimates of market concentration too high.” *Id.* Dr. Evans further explained that the mistake is even “more profound” than simply an erroneous market definition, because the analysis could lead to “condemning practices that are innocuous in a two-sided context.” *Id.*; see also David S. Evans & Michael D. Noel, *Defining Markets that Involve Multi-Sided Platform Businesses* 17 (Reg-Markets Ctr., Working Paper No. 07-18, 2007), <http://ssrn.com/abstract=1027933> (noting that “[t]here are many reasons to be wary of mechanical market definition exercises such as [the] SSNIP test”).
120. Consistent with the economic literature, *Amex* holds that a hypothetical monopolist test focusing on only one side of the platform is not permissible, because “[e]valuating both sides of a two-sided transaction platform is . . . necessary to accurately assess competition.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). The Second Circuit’s *Amex* decision similarly emphasized that to the extent the hypothetical monopolist test can ever

be applied to two-sided transaction platforms, it *must* “consider the feedback effects inherent on the platform by accounting for the reduction in [demand on one side of the platform] that would accompany any degree of . . . attrition” on the other side. *United States v. Am. Express Co.*, 838 F.3d 179, 200 (2d Cir. 2016).

121. At least one court evaluating two-sided transaction platforms after *Amex* has declined to apply the hypothetical monopolist test, instead relying upon traditional economic “‘practical indicia’ to assess whether products are ‘reasonably interchangeable.’” *United States v. Sabre Corp.*, 452 F. Supp. 3d 97, 138, 142 (D. Del. 2020) (rejecting the DOJ’s proposed market definition relying on the hypothetical monopolist test in a merger case involving two-sided transaction platforms).
122. Epic’s expert, Dr. Evans, attempts to apply the traditional hypothetical monopolist test to two different markets in the context of this case, but neither of his tests supports Epic’s relevant market theory.
123. In his first test, Dr. Evans attempts to establish a market for operating systems by applying the SSNIP to the price of an iOS device itself. That is legal error in at least two ways.
124. *First*, the price of both operating systems and iOS devices are meaningless here, because the relevant product is *transactions*, not operating systems or iOS devices. FOF ¶ 342. Epic is not a competitor or consumer in the mobile devices *or* the operating systems markets. Nor did Epic plead in its Complaint the existence of a foremarket for operating systems or assert any claim for relief regarding any market for operating systems or devices. *See supra* § II.B.iii (¶¶ 80–90); FOF ¶ 391. Whether a single seller of mobile operating systems or smartphones could profitably exercise monopoly power is thus irrelevant to this case.
125. *Second*, even assuming a foremarket for operating systems could otherwise be relevant to this case, Dr. Evans’ analysis is incorrect in that he applies the hypothetical monopolist test to *iOS devices*, not to operating systems. FOF ¶ 428. Any evidence of substitution revealed by Dr. Evans’ analysis thus relates not to his alleged foremarket for operating systems, but to an entirely *different* market for iOS devices. That is presumably because consumers do not purchase operating systems as standalone products; they purchase smartphones. FOF ¶ 394. There is therefore not even a rational way to apply the hypothetical monopolist test to Dr. Evans’ proposed foremarket. Thus, Dr. Evans’ first test does not support Epic’s foremarket theory.
126. In his second test regarding the purported aftermarket for app distribution, Dr. Evans once again purports to apply the SSNIP to the wrong thing—this time, he applies the SSNIP to the price that a consumer pays for digital transactions. That is, he questions whether a hypothetical monopolist could profitably impose a SSNIP to an app or in-app content, concluding that it could. But Dr. Evans focuses exclusively on the price of in-app purchases, to the exclusion of other digital transactions in the relevant market. FOF ¶ 435.
127. Moreover, both of Dr. Evans’ tests commit precisely the conceptual mistake that the academic literature (including his own writings) warns against: he analyzes each side of

the platform individually, thereby ignoring the strong indirect network effects that are the characteristic feature of two-sided transaction platforms. *See* David S. Evans & Michael D. Noel, *The Analysis of Mergers that Involve Multisided Platform Businesses*, 4 J. Competition L. & Econ. 663, 667 (2008). Indeed, in the case of the App Store, if a small number of consumers were to leave the platform because of increased transaction fees or other costs, then the App Store would become less valuable to developers, who may then also depart, leading to a “feedback loop of declining demand.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018). Yet Dr. Evans assumes that a departure of consumers will have no corresponding departure of developers, ignoring the indirect network effects he admits are indicative of a two-sided transaction platform. FOF ¶ 424.

128. Dr. Evans’ failure to consider these indirect network effects leads him to propose a market that is too narrow. Without accounting for the indirect network effects of a two-sided transaction platform, the hypothetical monopolist test overstates the ability of a hypothetical monopolist to profitably raise prices. While an increase in price on one side of the platform may initially appear profitable when accounting only for the loss of consumers on *that* side of the platform, the increase may in fact be unprofitable after consumers on the *other* side of the platform also depart upon realizing that the value of the platform to them has decreased. Thus, Dr. Evans’ hypothetical monopolist test overstates the ability of Apple (or any other operator of a two-sided transaction platform) to profitably raise prices above a competitive level, leading him to define the market to exclude the competitors that constrain Apple’s market power.
129. For these and other reasons, Dr. Evans’ application of the hypothetical monopolist test does not satisfy the standard for reliability of expert evidence under Federal Rule of Evidence 702.⁵
130. In the Ninth Circuit, it is the responsibility of the trial court to “assure that the expert testimony ‘both rests on a reliable foundation and is relevant to the task at hand.’” *Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010) (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993)). “[E]xpert evidence is inadmissible where the analysis is the result of a faulty methodology or theory.” *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1047–48 (9th Cir. 2014) (quotation marks omitted). The expert’s methodology must have obtained “general acceptance” in the relevant scientific community. *Daubert*, 509 U.S. at 594 (quotation marks omitted).
131. Dr. Evans’ application of the hypothetical monopolist test is unreliable and has not obtained “general acceptance” because the test as applied by Dr. Evans fails to account for indirect network effects. *See* Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 331 (2014) (noting the “consensus in the literature” that any application of the hypothetical monopolist test to a two-sided transaction platform would have to take into account indirect network effects). Dr. Evans *asserts*, without any actual analysis or tests, that because the separate effects of price changes on each side are small (based on his erroneous results from other tests), there

⁵ The Court directed the parties not to file motions in limine before trial. Hr’g Tr. 18:2 (Mar. 1, 2021).

are no indirect network effects. FOF ¶ 424. But as Dr. Evans’ own publications confirm, to properly account for indirect network effects in the context of a two-sided transaction platform, an economist should consider at least fourteen parameters in the demand system.” David S. Evans & Michael D. Noel, *Analyzing Market Definition and Power in Multi-Sided Platform Markets* 22–27 (Oct. 21, 2005), <https://perma.cc/PHC9-MHJ8>. Dr. Evans does not even enumerate those fourteen parameters here, and in fact accounts for less than four inputs per side. FOF ¶ 423.

132. Remarkably, Dr. Evans *does not dispute that his methodology is flawed*. Instead, he claims that any shortcomings should be excused under the maxim that perfection should not be the enemy of the good. That concession is fatal—in a case in which a firm seeks to compel its competitor to restructure its business model and provide access to its intellectual property at no or nominal cost, the guiding economic analysis should be based on hard science and reliable methodologies, not aphorisms. It is not enough to merely find a “good enough” means of assessing market definition. There is no “good enough” standard in economic science—either the methodology is sound, or it is not. And the product of an unsound methodology cannot be relied on by the Court.
133. Dr. Evans himself has reiterated that while it might be “technically possible to extend the hypothetical monopoly test to two-sided platforms, the challenges of implementing the SSNIP test empirically in two-sided markets are *likely to be overwhelming in practice*.” David S. Evans, *The Antitrust Economics of Free, Comp. Pol. Int’l*, Spring 2011, at 84 (emphasis added). The challenges *were* overwhelming here, as Dr. Evans admits, yet he applied the test anyway. That is not a reliable methodology.
134. Importantly, Epic, not Apple, bears the burden of proving market definition. *See Thurman Indus., Inc. v. Pay ‘N Pak Stores, Inc.*, 875 F.2d 1369, 1373 (9th Cir. 1989). Epic’s own expert, though, has already admitted that his analysis of market definition is deficient, conceding that his application of the hypothetical monopolist test is deficient and offering no alternative analysis for the Court to consider. As a result, Dr. Evans’ application of the hypothetical monopolist test is unreliable and his opinion on that basis is inadmissible.
135. The defects in Dr. Evans’ application of the hypothetical monopolist test do not present a typical “battle of the experts”; rather, they present a *legal* bar to admissibility of his opinion. Reliability of expert testimony depends on “appropriate criteria such as testability, publication in peer-reviewed literature, known or potential error rate, and general acceptance.” *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1044 (9th Cir. 2014). *All* of these sources demonstrate not only that Dr. Evans’ methodology is not accepted in relevant academic community, but also that Dr. Evans’ peers *and Dr. Evans himself* have expressly warned against application of the hypothetical monopolist test in this context without appropriate modifications or caveats. In a different case, the hypothetical monopolist test may be appropriate, but here, where Dr. Evans has admitted—both in this case and his own pre-litigation writings—that the hypothetical monopolist test is flawed in this context, the Court must exercise its gatekeeping function and preclude admissibility of Dr. Evans’ testimony in this respect at trial.

136. For the same reasons, Epic’s criticism of Apple’s experts for not performing a hypothetical monopolist test is also legally deficient, and any testimony from Epic’s experts to that effect is inadmissible as both unreliable and irrelevant pursuant to the *Daubert* standard. Such testimony does not have “a valid connection to the pertinent inquiry,” *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir. 2010) (quotation marks omitted), because the hypothetical monopolist test is neither a necessary nor sufficient predicate to market definition in this context. And such testimony does not have a “reliable basis in the knowledge and experience of the relevant discipline” for all of the reasons outlined above. *Id.* (quotation marks omitted).
137. As misapplied by Epic’s experts, the hypothetical monopolist test is irrelevant and unreliable as a methodology to evaluate the proper market in this case. No testimony regarding the application (or non-application) of the hypothetical monopolist test is admissible.

b. Even If the Hypothetical Monopolist Test Could Apply, It Is Not Dispositive

138. In any event, the hypothetical monopolist test, even if otherwise applicable here, is not dispositive. “The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.” *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Epic appears to erroneously assume that the hypothetical monopolist test is the *only* permissible methodology for defining a market—Dr. Evans’ critiques of Apple’s experts are largely limited to criticizing their failure to apply the hypothetical monopolist test. This assumption is legally incorrect.
139. “[T]here is no requirement in [the Ninth] Circuit that an expert use any particular form of analysis in developing an opinion on market definition.” *Sumotext Corp. v. Zoove, Inc.*, No. 16-CV-1370, 2020 WL 533006, at *11 (N.D. Cal. Feb. 3, 2020) (rejecting party’s objection that the opposing expert’s opinion on market definition was “unreliable because he failed to perform the SSNIP test”). This Court has observed in other cases that there is no “legal support” for the proposition that an expert opinion is “inadmissible because he failed to conduct either a formal econometric analysis of cross-elasticity of demand or a ‘hypothetical monopolist’ test.” *Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37-YGR, 2014 WL 4809288, at *7 (N.D. Cal. Sept. 26, 2014). Were it otherwise, and the hypothetical monopolist test were *necessary* to a proper evaluation of market definition as Epic contends, many landmark antitrust cases would have to be condemned for evaluating market definition without any reference to SSNIP or the hypothetical monopolist test. *See, e.g., Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285–87 (2018); *Brown Shoe Co. v. United States*, 370 U.S. 294, 325–28 (1962); *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202–06 (9th Cir. 1997).
140. For example, in addition to assessing quantitative data regarding the cross-elasticity of demand, the Ninth Circuit allows courts to apply “a qualitative approach when determining the relevant market.” *GSI Tech., Inc. v. Cypress Semiconductor Corp.*, No. 11-CV-3613, 2015 WL 364796, at *3 (N.D. Cal. Jan. 27, 2015); *see also, e.g., Tanaka v. Univ. of S. Cal.*,

252 F.3d 1059, 1063–64 (9th Cir. 2001) (analyzing market definition using only qualitative factors and without reference to the hypothetical monopolist test).

141. Under this approach, courts may define the boundaries of a market by looking to “such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.” *Brown Shoe Co.*, 370 U.S. 294, 325 (1962); *see also McWane, Inc. v. FTC*, 783 F.3d 814, 829–30 (11th Cir. 2015) (noting that “[c]ourts routinely rely on qualitative economic evidence to define relevant markets” (quotation marks omitted)).
142. Indeed, relying on the hypothetical monopolist test to the exclusion of qualitative factors can be dangerous and lead to unduly narrow markets. One of Epic’s experts, Dr. Cragg, testified that in the *Amex* case before the Second Circuit, multiple sources of analysis, including a hypothetical monopolist test, led to the erroneous conclusion that the market there was one-sided. Dr. Cragg went on to note that he has forgone applying the hypothetical monopolist in prior cases, and that many economists have opined that a hypothetical monopolist or a SSNIP test is not necessary to define a relevant market, because there’s a certain circularity to the definition.
143. Even if Epic were correct that one of the factors, “sensitivity to price changes,” weighed in favor of its market definition, *all* of the remaining factors support Apple’s market definition.
144. *First*, there is widespread industry and public recognition of the market for digital transactions for game apps. The detailed analysis set forth above makes clear that consumers in fact have a variety of options for downloading and playing game apps, and have a variety of devices available to them to do so. *See supra* § II.B.ii.a (¶¶ 39–45). And as noted above, Apple’s internal analyses confirm that it views itself as being in competition with other digital transaction platforms for game apps. *See supra* § II.B.ii.a (¶ 54).
145. *Second*, digital transactions for game apps have “peculiar characteristics or uses.” Non-game apps serve a wide range of useful functions—they might give you directions, perform complex equations, or find a good restaurant. But all game apps have the same distinct use—the entertainment of the user. To be sure, game apps also have wide variety in terms of design and complexity, but all game apps share a common use among users that distinguishes them from non-game apps.
146. *Third*, game apps have unique production facilities or technology. Many game apps require special software to run effectively. FOF ¶ 345. Epic knows this well, as it designed the Unreal Engine, software specifically designed to help developers create games for distribution on various game transaction platforms. FOF ¶ 250.
147. *Fourth*, digital transactions for game apps have distinct customers. On the one side are game developers, which as noted above, tend to specialize in the production of game apps and tend to derive the great majority of their revenue from game apps as opposed to

non-game apps. *See supra* § II.B.ii.b (¶ 68). On the other side are consumers, many of which might play games casually, but only a subset of which consistently make purchases on games like *Fortnite*, engage in online play, or purchase consoles or other gaming-specific devices. When Epic issues new content for *Fortnite*, it is targeting a specific subset of the iPhone user base.

148. *Fifth*, digital transactions for game apps have distinct prices. As discussed elsewhere, *see infra* § III.B.i.a (¶ 230), the 30% base commission rate is standard in the industry for digital transactions for game apps. Although there are some small market outliers, the major market participants—Apple, Google, Microsoft, Sony, Nintendo, etc.—all charge a base commission of 30%, with reduced rates in certain circumstances. This pricing supports the notion that these platforms are in competition with each other in the same market.
149. *Finally*, there are specialized vendors for digital transactions for game apps. While some platforms, like the App Store, offer a wider variety of apps, many platforms focus exclusively or nearly exclusively on games. A consumer cannot buy (and likely would not want to buy) a map app for use on the PlayStation 5, but rather would go to that platform specifically to execute digital transactions for games. FOF ¶¶ 349–349.3. Epic appears to recognize that games are a discrete subset of apps, as it describes EGS as “a digital video game storefront through which gamers can download various games, some developed by Epic, and many offered by third-party game developers.” Dkt. 1 ¶ 27.
150. All of this evidence must be also be considered against the larger backdrop of the evidence of interchangeability. The App Store competes with other transaction platforms—including those provided through desktops, laptops, gaming consoles, and other smartphones—in the market for digital transactions for game apps. Consumers have a variety of choices when determining whether to download a game app on their phone, their PC, their Nintendo Switch, or some other device, and Apple, like all other market participants in this area, must compete to persuade consumers to use its platform for those digital transactions. And iOS users even have the option—as they always have—to use the web for digital game transactions.
151. For all of these reasons, Epic’s proposed market definition is untenable.

C. Geographic Market⁶

152. Epic’s complaint proposes a “worldwide” geographic market, Dkt. 1 ¶¶ 57, 118, and its expert proposes a global market excluding China. Both of these proposed geographic markets are legally improper and ignore significant barriers that separate the U.S. market for digital game transactions from the rest of the world. The correct relevant geographic market is the United States, and more specifically, it is U.S. consumers and developers inside and outside of the United States who sell to U.S. consumers. FOF ¶¶ 438–46.
153. The geographic market in a case involving a two-sided transaction platform must take into account both sides of the platform—here, consumers and developers. FOF ¶ 437.

⁶ Geographic market definition is addressed in § 4.2, page 21 of the Joint Elements Submission.

Moreover, when evaluating the geographic market, it is inappropriate to merge multiple geographic areas into one market when there are “barrier[s]” preventing competition between the areas, *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991), or if consumers in one geographic area do not have access to “external sources” of the relevant product, *Pacifica Kidney Ctr., Inc. v. Nat’l Med. Care, Inc.*, 995 F.2d 232 (9th Cir. 1993) (unpublished opinion).

154. Courts must also keep in mind a core tenet of American antitrust law: It “do[es] not regulate the competitive conditions of other nations’ economies.” *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 582 (1986). The U.S. antitrust laws are concerned only with U.S. consumer welfare, not the welfare of foreign consumers. *See Vollrath Co. v. Sammi Corp.*, No. 85-CV-820, 1989 WL 201632, at *8 n.21 (C.D. Cal. 1989) (noting that “harm to . . . Korean manufacturers could not form the basis of an antitrust claim”).
155. The evidence demonstrates that Epic’s proposed global market is legally untenable.
156. Consumers generally access game app platforms like the App Store through country-specific “storefronts.” FOF ¶ 438. The storefronts of different countries are distinct from each other, offering differing apps and features. FOF ¶ 439. For example, in some countries, such as China and South Korea, there are specific licensing and disclosure requirements that must be met before apps, including games, can be released to the public. FOF ¶ 442.
157. Consumers in a given country, by default, access game app platforms through their respective domestic storefronts. FOF ¶¶ 440–41. Consumers are generally restricted to their domestic storefronts because of regulatory restrictions, language barriers, and currency differences. FOF ¶¶ 441–42; *cf. TYR Sport, Inc. v. Warnaco Swimwear, Inc.*, 709 F. Supp. 2d 802, (C.D. Cal. 2010) (considering “differences in local regulations” and “currency and pricing” as important barriers to a geographic market). On the App Store, for instance, consumers cannot change their storefront to that of another country without completing a complicated and inconvenient process. FOF ¶ 441. And they must have a domestic credit card or bank to use a particular storefront. FOF ¶ 442.
158. U.S. consumers, then, cannot “practicably turn” to any other country’s storefront for digital game transactions, *United States v. Philadelphia Nat’l Bank*, 374 U.S. 321, 359 (1963) (quotation marks omitted), but instead effectively have access to digital game transactions in only the United States, FOF ¶ 444. There are no “alternate sources of supply” of digital game transactions. *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991) (quotation marks omitted). As a result, from the perspective of consumers, the United States is a distinct area of competition.
159. On the developer side of the platform, however, the same restrictions do not exist. Both foreign and U.S. developers can and do transact with U.S. consumers through the U.S. storefronts of game app platforms. FOF ¶ 445. No significant barriers prevent a Chinese game developer, for example, from selling a game to U.S. consumers on the App Store’s U.S. storefront. *Id.* Hence, on the developer side of the platform, the geographic market should include both foreign and U.S. developers who sell to U.S. consumers.

III. EPIC'S SHERMAN ACT CLAIMS

A. General Principles

160. The principal theories of relief in Epic's Complaint arise out of Sections 1 and 2 of the Sherman Act. *See generally* Dkt. 1. Epic has asserted six claims under the Sherman Act, organized under four legal frameworks:

(1) Unlawful monopoly maintenance under Section 2 of the Sherman Act:

-Unlawful monopoly maintenance in the "iOS App Distribution Market," *see infra* § III.B.i (¶¶ 216–330);

-Unlawful monopoly maintenance in the "iOS In-App Payment Processing Market," *see infra* § III.B.ii (¶¶ 331–73);

(2) Denial of essential facility in the "iOS App Distribution Market" under Section 2 of the Sherman Act, *see infra* § III.B.iii (¶¶ 374–419);

(3) Tying in the App Store in the "iOS App Distribution Market" to In-App Purchase in the "iOS In-App Payment Processing Market" under Section 1 of the Sherman Act, *see infra* § III.C.i (¶¶ 423–86);

(4) Unreasonable restraints of trade under Section 1 of the Sherman Act:

-Unreasonable restraints of trade in the "iOS App Distribution Market," *see infra* § III.C.ii (¶¶ 487–530); and

-Unreasonable restraints of trade in the "iOS In-App Payment Processing Market," *see infra* § III.C.iii (¶¶ 531–41).

i. Epic's Theories of Liability

161. Each of these legal frameworks consists of different, although sometimes overlapping, basic elements.

162. A plaintiff pursuing a Section 2 claim for unlawful monopoly maintenance must show: "(a) the possession of monopoly power in the relevant market; (b) the willful acquisition or maintenance of that power; and (c) causal antitrust injury." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted). The second of these elements requires the plaintiff to show the willful maintenance of monopoly power "through exclusionary conduct." *MetroNet Servs. Corp. v. Qest Corp.*, 383 F.3d 1124, 1130 (9th Cir. 2004). The full framework for unlawful monopoly maintenance claims under Section 2 is set forth below. *See infra* § III.B.i (¶¶ 216–19).

163. A plaintiff pursuing a Section 2 claim for denial of an essential facility must show (1) that the defendant is "a monopolist in control of an essential facility"; (2) that the plaintiff "is unable reasonably or practically to duplicate the facility"; (3) that the defendant "has

refused to provide [the plaintiff] access to the facility”; and (4) that “it is feasible for [the defendant] to provide such access.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016). The full framework for essential facility claims under Section 2 is set forth below. *See infra* § III.B.iii (¶¶ 374–84).

164. A plaintiff pursuing a Section 1 claim for unlawful tying must show the linking of two separate products from two separate product markets. *See Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006). Tying claims are assessed under either the *per se* framework or the rule of reason analysis, *see id.* at 29, although under either analysis, the Court must assess the anticompetitive effects of the alleged tying. The full framework for tying claims under Section 1 is set forth below. *See infra* § III.C.i.a (¶¶ 426–30).
165. A plaintiff pursuing a Section 1 claim for unreasonable restraint of trade must prove “(1) the existence of an agreement, and (2) that the agreement was in unreasonable restraint of trade.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016). Except for a small number of agreements that are treated as *per se* unreasonable restraints of trade, agreements alleged to be in restraint of trade are analyzed under the burden-shifting framework of the “rule of reason.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). The full framework for claims of unreasonable restraint of trade under Section 1 is set forth below. *See infra* § III.C.ii (¶¶ 487–504).
166. Although Epic has pursued different theories of relief here, all of its claims revolve around and challenge the same fundamental “contractual and technical restrictions.” Dkt. 1 ¶ 17.
167. *First*, Epic challenges several contractual provisions:

A. Section 3.2(g) of the DPLA, which provides:

Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement.

B. Section 3.3.2(b) of the DPLA, which provides:

Interpreted code may be downloaded to an Application but only so long as such code . . . (b) does not create a store or storefront for other code or applications

C. Section 3.2.2(i) of the App Store Review Guidelines, which prohibits:

Creating an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store or as a general-interest collection.

D. Section 3.1.1 of the App Store Review Guidelines, which provides:

If you want to unlock features or functionality within your app, (by way of example: subscriptions, in-game currencies, game levels, access to premium content, or unlocking a full version), you must use in-app purchase. Apps may not use their own mechanisms to unlock content or functionality, such as license keys, augmented reality markers, QR codes, etc. Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than in-app purchase.

E. Section 3.1.3(a) of the App Store Review Guidelines, which provides:

Apple may allow a user to access previously purchased content or content subscriptions . . . , provided that you agree not to directly or indirectly target iOS users to use a purchasing method other than in-app purchase, and your general communications about other purchasing methods are not designed to discourage use of in-app purchase.

168. *Second*, Epic challenges two technical designs of iOS and the App Store:

- A. iOS does not permit users to download app stores or apps directly from the websites (i.e., sideloading), and instead requires that native apps be downloaded only from the App Store. *See* Dkt. 1 ¶ 66.
- B. Apple pre-installs the App Store on the home screen of every iOS device it sells, and does not pre-install competing app stores on iOS devices or allow users to remove the App Store. *See* Dkt. 1 ¶ 67.

ii. Business Justifications and Procompetitive Effects

- 169. Common to all of Epic’s theories is that the Court must (assuming Epic can clear the numerous other threshold legal questions) assess the competitive effects of the challenged contractual and technical restraints, including any legitimate procompetitive business justifications for the conduct. Each legal framework for liability, however, analyzes procompetitive business justifications under a different paradigm.
- 170. *First*, in an unlawful monopoly maintenance claim under Section 2, “the plaintiff is obliged to make out a *prima facie* case that the monopolist has engaged in ‘exclusionary’ conduct,” and “[a]t that point the proof burden ordinarily shifts to the defendant to offer a ‘justification’ for the conduct.” 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.); *see also* *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (“[I]f a plaintiff successfully establishes a *prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a ‘procompetitive justification’ for its conduct.” (quotation marks omitted)). The plaintiff “may rebut an asserted business justification by demonstrating either that the justification does not legitimately promote competition or that the

justification is pretextual.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1212 (9th Cir. 1997).

171. At no point in a Section 2 monopoly maintenance claim is the Court to consider the availability of less restrictive alternatives, because in an unlawful monopoly maintenance claim under Section 2, “there is no least restrictive alternative requirement,” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 620 (9th Cir. 1990), and there is no “‘balancing’ of social gains against competitive harms,” 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.); see also *Behrend v. Comcast Corp.*, No. 03-CV-6604, 2012 WL 1231794, at *19 (E.D. Pa. Apr. 12, 2012).
172. *Second*, in an essential facility claim under Section 2, once the defendant has offered legitimate business justifications for its conduct, the plaintiff bears “the burden of proving that the defendant acted without a legitimate business justification.” *City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1366–68 (9th Cir. 1992). This element is part of the plaintiff’s burden to show that providing access to the essential facility would be feasible. See *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992).
173. *Third*, in an unreasonable restraint of trade claim under Section 1, procompetitive business justifications are part of the rule-of-reason balancing. Under that framework, “the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market. If the plaintiff carries its burden, then the burden shifts to the defendant to show a procompetitive rationale for the restraint. If the defendant makes this showing, then the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (citations omitted).
174. *Fourth*, in a tying claim under Section 1, procompetitive business justifications provide an affirmative defense to a tying claim analyzed under the *per se* rule. See *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987). If the tying claim is analyzed under the rule-of-reason framework, then procompetitive business justifications are analyzed in the ordinary course of that analysis as set forth above.
175. Despite the varying frameworks and burdens, the procompetitive design of iOS and the App Store is relevant to all of Epic’s claims, assuming Epic could satisfy the other elements of its claims. It therefore is useful upfront to preview the various ways in which Apple has designed the App Store to be procompetitive in numerous respects.
176. The “walled garden” design of iOS and the App Store has many procompetitive effects, discussed in more detail with regard to particular claims below. See *infra* § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–65). Some cross-cutting points, however, bear mention at the outset.
177. The design of iOS enhances product reliability and security, as well as consumer safety and privacy. Because Apple is able to curate which native apps users are able to download

to their iPhones, it is better able to protect its users from malware, spyware, privacy breaches, or other content that may be harmful to users or their devices. The security, privacy, and reliability that Apple provides is a result of its substantial investment into the App review process, through which native iOS apps are reviewed by Apple’s review team to ensure that consumers are receiving a safe and secure experience. Apple has invested substantial resources into ensuring that the App Store is the most trusted place to download apps.

178. These security, privacy, and reliability features also benefit developers, because developers who distribute their apps through the App Store benefit from the credibility and goodwill Apple has established through its curation of the App Store. Apple puts its reputation behind all of the apps distributed through the App Store, and consumers are thus willing to download apps from smaller developers who otherwise may not have an existing reputation for consumer security or reliability. Developers therefore benefit from having a centralized marketplace for apps that users know and trust. These are the network effects that characterize two-sided transaction platforms.
179. Indeed, Apple’s “walled garden” approach is a point of competitive differentiation from smartphones and tablets that run on other operating systems, particularly Android. Android devices typically allow sideloading, third-party app stores, and other alternative methods of app distribution. Consumers who value such features may purchase those devices, while consumers who believe the additional risks outweigh the benefits may purchase iOS devices. Similarly, developers who value alternative distribution channels may choose to create Android apps, while others may choose to create native iOS apps to distribute through the App Store (or web apps if they wish to reach iOS users through other means). If iOS were forced to be more like Android, this important aspect of consumer and developer choice would be eliminated, and one of the technological grounds on which Android and iOS devices actively compete (“open” vs. “closed” systems) would be resolved by judicial fiat rather than by operation of the free market.
180. The design of iOS also protects Apple’s proprietary information and intellectual property, and prevents free-riding. The innovation offered by the App Store has not come without cost—Apple has invested billions of dollars into the development of iOS and the App Store, and continues to make substantial investments to improve the quality of the services offered therein. Apple must do so because, as noted above, it is in constant competition with other transaction platforms that offer similar services. Apple has chosen to make iOS and the App Store available to third-party developers, and to provide tools to developers to help them design iOS-compatible apps, contingent on developers executing a license agreement that gives them a limited license to use Apple’s intellectual property. The “walled garden” design of iOS prevents developers from free-riding on Apple’s innovation and design. There is no dispute here that development and distribution of iOS-compatible apps requires use of Apple’s intellectual property, and the terms and conditions that Apple places on the licensing of that intellectual property are a procompetitive component of the design of iOS that allow Apple’s property rights to be *shared* while still incentivizing innovation by other firms.

181. It is noteworthy in this respect that Epic persistently misquotes Section 3.2(g) of the DPLA, which—according to the Complaint—“requires that developers distribute *their apps* only through the App Store.” Dkt. 1 ¶ 71 (emphasis added). What the DPLA actually says is that “[a]pplications for iOS Products . . . *developed using the Apple Software* may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store.” FOF ¶ 106.3 (emphasis added). Epic, while complaining about Apple’s requirement that native iOS apps be distributed through the App Store, fails to acknowledge that such apps use Apple’s intellectual property.
182. These and a number of other procompetitive effects of the design of iOS and the App Store are discussed in more detail below, but they make clear as a threshold matter that what Epic is challenging here is a feature that was designed from the start to encourage innovation, enhance the consumer experience, and broaden choice. Developers, including Epic, have benefitted greatly from the design of iOS, and it is through Apple’s careful curation of the App Store that the thriving app marketplace has emerged.

iii. Causal Antitrust Injury⁷

183. Another element that is common to all of Epic’s Sherman Act claims and that should be considered as a threshold matter is the issue of causal antitrust injury.
184. Every plaintiff bringing an antitrust claim must show “(1) unlawful conduct, (2) causing an injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent.” *Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1027 (N.D. Cal. 2015) (quotation marks omitted). The Ninth Circuit has also imposed an additional element—that “the injured party be a participant in the same market as the alleged malefactors,” meaning “the party alleging the injury must be either a consumer of the alleged violator’s goods or services or a competitor of the alleged violator in the restrained market.” *Somers v. Apple, Inc.*, 729 F.3d 953, 963 (9th Cir. 2013) (quotation marks omitted).
185. Most relevant here, “[t]he Supreme Court has made clear that injuries which result from increased competition . . . are not encompassed by the antitrust laws.” *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999). “Where the defendant’s conduct harms the plaintiff without adversely affecting competition generally, there is no antitrust injury.” *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1158 (9th Cir. 2003).
186. Epic has not identified any injury of the type the antitrust laws protect. At bottom, Epic does not like the terms on which Apple has chosen to deal with it or other developers, but that is not a basis for an antitrust claim. What Epic really wants is to avoid paying the 30% commission that it agreed to pay Apple. At most, that is an injury to *Epic*, it is not an injury to *competition*. See *Gorlick Distrib. Ctrs., LLC v. Car Sound Exhaust Sys., Inc.*, 723 F.3d 1019, 1024–25 (9th Cir. 2013) (explaining that a plaintiff must show injury to “competition in the market as a whole, not merely injury to itself as a competitor”). Epic also seeks to

⁷ Causal antitrust injury is addressed in § 7.3, page 67 of the Joint Elements Submission.

dictate the terms upon which Apple licenses its intellectual property to developers so that Epic can earn more money, but again, that is not an antitrust injury.

iv. Foreign Trade Antitrust Improvements Act⁸

187. The final piece that is common to all of Epic’s Sherman Act claims is that foreign conduct—including consumer spending on foreign storefronts of the App Store—is irrelevant to Epic’s Sherman Act claims.
188. “The FTAIA provides that the Sherman Act ‘shall not apply to conduct involving trade or commerce (other than import trade or import commerce) with foreign nations unless—(1) such conduct has a direct, substantial, and reasonably foreseeable effect—(A) on trade or commerce which is not trade or commerce with foreign nations.’” *United States v. Hui Hsiung*, 778 F.3d 738, 750–51 (9th Cir. 2015) (quoting 15 U.S.C. § 6a).
189. “[The FTAIA] initially lays down a general rule placing all (nonimport) activity involving foreign commerce outside the Sherman Act’s reach. It then brings such conduct back within the Sherman Act’s reach provided that the conduct both (1) sufficiently affects American commerce, *i.e.*, it has a direct, substantial, and reasonably foreseeable effect on American domestic, import, or (certain) export commerce, and (2) has an effect of a kind that antitrust law considers harmful, *i.e.*, the effect must giv[e] rise to a [Sherman Act] claim.” *United States v. Hui Hsiung*, 778 F.3d 738, 754 (9th Cir. 2015) (quoting *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 162 (2004)).
190. A direct effect “follows as an immediate consequence of the defendant’s activity,” “without deviation or interruption.” *United States v. LSL Biotechnologies*, 379 F.3d 672, 680 (9th Cir. 2004) (quotation marks omitted).
191. An effect is substantial if it “involves a sufficient volume of U.S. commerce” and is not “a mere ‘spillover effect,’” *see Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 534 F. Supp. 2d 1101, 1110 (N.D. Cal. 2007), and it is reasonably foreseeable if it would “have been evident to a reasonable person making practical business judgments,” *Animal Sci. Prods., Inc. v. China Minmetals Corp.*, 654 F.3d 462, 471 (3d Cir. 2011).
192. Epic’s proposed “worldwide market” for “iOS app distribution” includes non-import commerce with foreign nations—*i.e.*, the distribution of apps to consumers in other countries. The FTAIA, however, provides that the Sherman Act does not apply to such conduct unless an exception applies.
193. Epic has not carried its burden of establishing that the distribution of apps to consumers in other countries has either a direct or a substantial effect on U.S. commerce. All of the conduct of which it complains in this suit occurred in the United States—the design of iOS, the design and launch of the App Store, the implementation of IAP, the execution of the DPLA, and the termination of Epic’s DPLA following its willful breach. There is no

⁸ The Foreign Trade Antitrust Improvements Act is addressed in § 9, pages 82–83 of the Joint Elements Submission.

evidence that any conduct overseas has *any* domestic effect, and, more importantly, no evidence that any conduct overseas has any *anticompetitive* domestic effect. *See United States v. Hui Hsiung*, 778 F.3d 738, 754 (9th Cir. 2015).

194. Indeed, Epic *cannot* prove that foreign conduct has an effect here, because Magistrate Judge Hixson denied Epic’s application to take discovery regarding Apple’s activities and customers outside of the United States, concluding that “[a]ll of the claims and defenses in this case arise under U.S. or California law, not some non-existent worldwide antitrust law.” *See* Dkt. 226 at 3. Epic did not appeal that order, and no discovery was thus taken concerning foreign conduct. Evidence regarding conduct overseas thus simply is not in the record.
195. That any foreign conduct of Apple is excluded from Epic’s Sherman Act claims is further made apparent by the fact that Epic *has* attempted to pursue litigation against Apple for its foreign conduct in other, foreign forums. The Court may properly take judicial notice of these proceedings. *See U.S. ex rel. Robinson Rancheria Citizens Council v. Borneo, Inc.*, 971 F.2d 244, 248 (9th Cir. 1992). For example, there currently is pending a proceeding against Apple in Australia related to its conduct relevant in that jurisdiction. *See* Josh Taylor, *Fortnite Maker Epic Games Sues Apple in Australia for App Store Ban*, *The Guardian* (Nov. 17, 2020), <https://perma.cc/2VV4-2TM7>. Epic also tried to bring suit against Apple in the UK for foreign conduct, although that case was dismissed. *See Epic’s Bid to Sue Apple Over Fortnite in UK Rejected*, *BBC News* (Feb. 22, 2021), <https://perma.cc/JNU8-VCTY>. And Epic filed a complaint with the European Commission’s directorate-general for competition, alleging that Apple’s foreign conduct violated EU law. *See Epic Game Files EU Antitrust Complaint Against Apple*, *Epic Games* (Feb. 17, 2021), <https://perma.cc/3P4U-62TS>. Thus, even Epic appears to recognize that its Sherman Act claims are limited to domestic conduct.
196. Epic’s failure to carry its burden under the FTAIA has at least two consequences for this case. First, nothing that Apple is alleged to have done overseas is relevant to Apple’s liability here—only its conduct within the United States need be considered. Second, any relief that Epic obtains must be limited to the United States for the same reason. If Epic prevails on liability and obtains injunctive relief, such injunctive relief *must* be limited, as a matter of law, to the United States. Foreign conduct that does not have an anticompetitive effect in the United States is beyond the scope of the Sherman Act, and thus cannot be enjoined pursuant to such a claim.
197. International comity also requires that the court not consider foreign conduct. *Hartford Fire Ins. Co. v. California*, 509 U.S. 764, 797–98 & n.24 (1993); *see also Unigestion Holdings, S.A. v. UPM Tech., Inc.*, 305 F. Supp. 3d 1134, 1145 (D. Or. 2018) (even where “the FTAIA does not bar the application of the Sherman Act,” a “[c]ourt may still apply the principles of international comity”).
198. Courts consider “several elements” in deciding whether to abstain from applying U.S. law to conduct occurring in other countries: (1) the degree of conflict with foreign law or policy; (2) the nationality or allegiance of the parties and the locations or principal places of business of corporations; (3) the extent to which enforcement by either state can be

expected to achieve compliance; (4) the relative significance of effects on the United States as compared with those elsewhere; (5) the extent to which there is explicit purpose to harm or affect American commerce; (6) the foreseeability of such effect; (7) the relative importance to the violations charged of conduct within the United States as compared with conduct abroad. *Metro Indus. v. Sammi Corp.*, 82 F.3d 839, 846 (9th Cir. 1996).

199. Courts have recognized that “rampant extraterritorial application of U.S. law ‘creates a serious risk of interference with a foreign nation’s ability independently to regulate its own commercial affairs.’” *Motorola Mobility LLC v. AU Optronics Corp.*, 775 F.3d 816, 824 (7th Cir. 2015) (quoting *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 165 (2004)). This is particularly true in private antitrust actions, such as this one, because “private plaintiffs often are unwilling to exercise the degree of self-restraint and consideration of foreign governmental sensibilities generally exercised by the U.S. Government.” Joseph P. Griffin, *Extraterritoriality in U.S. and EU Antitrust Enforcement*, 67 Antitrust L.J. 159, 194 (1999); *see also Empagran*, 542 U.S. at 171 (explaining how and why the government, “unlike a private plaintiff,” is empowered to seek broader remedies “to protect the public from further anticompetitive conduct and . . . harm”).
200. Because Epic is seeking injunctive relief, and other countries have their own robust competition laws and enforcers, these concerns are even more acute. The Supreme Court has recognized that European competition law, for example, treats vertical restraints differently than U.S. antitrust law. *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 167 (2004) (citing 2 W. Fugate, *Foreign Commerce and the Antitrust Laws* § 16.6 (5th ed. 1996)). Using U.S. law to proscribe conduct that is or may be lawful where it occurred risks violating the “golden rule among nations”—to “give the respect to the laws, policies and interests of others that [we] would have others give to [our] own in the same or similar circumstances.” *Mujica v. AirScan Inc.*, 771 F.3d 580, 608 (9th Cir. 2014) (quotation marks omitted).
201. Accordingly, as under the FTAIA, international comity compels the Court to limit the focus of the case to domestic conduct, and any injunctive relief awarded to Epic must be confined to the United States.

B. Sherman Act Section 2 (Epic Counts 1, 2, and 4)

202. Epic brings two claims under Section 2 of the Sherman Act for unlawful monopoly maintenance. In Count 1, Epic alleges that Apple engaged in unlawful monopolization of the “iOS App Distribution Market” because it “prevents the distribution of iOS apps through means other than the App Store and prevents developers from distributing competing app stores to iOS users.” Dkt. 1 ¶ 188. In Count 4, Epic alleges that Apple has a monopoly in the “iOS In-App Payment Processing Market” that it has unlawfully maintained by requiring “iOS developers that sell in-app content to exclusively use Apple’s In-App Purchase.” *Id.* ¶ 220.
203. Epic also has brought a claim under Section 2 of the Sherman Act that Apple has violated the Sherman Act “through its unlawful denial to Epic and other app distributors of an essential facility—access to iOS.” Dkt. 1 ¶ 197.

204. A careful analysis of each of the elements of Epic’s Section 2 claims makes clear that Epic’s claims fail for numerous reasons. *See infra* §§ III.B.i–II.B.iii (¶¶ 216–419). Indeed, whereas Apple’s arguments and defenses fit squarely within the established framework for Sherman Act claims, Epic urges the Court to sanction unprecedented expansions of the antitrust laws that are squarely foreclosed by binding precedent and antithetical to the animating purposes of the Sherman Act.
205. The principal authority on which Epic relies for its novel theories of Section 2 liability is *United States v. Microsoft*, 253 F.3d 34 (D.C. Cir. 2001), in which the D.C. Circuit partially affirmed a district court’s liability findings (but vacated the remedy) regarding Microsoft’s practice of discouraging users of Windows from using an Internet browser other than Microsoft’s own Internet Explorer. *Microsoft* was decided two decades ago, in a different technological era and context, and by a different Circuit. And it does not support Epic’s claims here.
206. Microsoft was accused of monopolizing the market for Intel-compatible PC operating systems through a variety of allegedly anticompetitive acts and contractual restrictions. *See United States v. Microsoft*, 253 F.3d 34, 47 (D.C. Cir. 2001). First, the plaintiffs challenged certain provisions in Microsoft’s agreements licensing Windows to OEMs that prohibited OEMs from removing any desktop icons from Windows (including Microsoft’s Internet Explorer), from altering the “boot sequence,” or from otherwise altering the appearance of the Windows desktop, all of which had the effect of restraining OEMs’ ability to replace Internet Explorer with a different Internet browser. *See id.* at 60–61. Second, the plaintiffs challenged the integration of Internet Explorer into Windows, which prevented OEMs from removing the browser. *See id.* at 64. Third, the plaintiffs challenged Microsoft’s agreements with various Internet Access Providers that offered Internet Explorer at an attractive (below cost) price and that encouraged Internet Access Providers to promote Internet Explorer in exchange for better integration with Windows. *See id.* at 67–68. Fourth, the plaintiffs challenged various agreements Microsoft had with Internet Content Providers, Independent Software Vendors, and Apple to promote or require the usage of Internet Explorer on various platforms in exchange for technical information about upcoming Windows updates and upgrades. *See id.* at 71–72. And finally, the plaintiffs challenged steps that Microsoft had taken to obstruct the development of software that would threaten Microsoft’s monopoly in operating systems. *See id.* at 74.
207. The D.C. Circuit found that much, although not all, of Microsoft’s conduct had anticompetitive effects because it tended to exclude competition through coercive agreements and strategic restrictions, rather than through innovation or having the superior product. The D.C. Circuit also held that Microsoft failed in numerous places to offer any evidence of legitimate procompetitive justifications for its conduct. *See United States v. Microsoft*, 253 F.3d 34, 71–73, 76–77 (D.C. Cir. 2001). However, the Court vacated the relief ordered (divestiture) and remanded to a different judge for further proceedings. *See id.* at 97–118.
208. There are several distinguishing factors that make *Microsoft* largely inapplicable to this case.

209. *First*, unlike here, there was no single-brand market alleged in *Microsoft*. See *United States v. Microsoft*, 253 F.3d 34, 52 (D.C. Cir. 2001) (defining the market as “the licensing of all Intel-compatible PC operating systems worldwide”). The conduct challenged in *Microsoft* thus did not simply affect Microsoft’s own products and intellectual property, but rather weakened the intellectual property rights of others and sought to control the market through anticompetitive conduct rather than through innovation. Here, by contrast, Apple developed an innovative operating system and transaction platform for use on *its* devices (and for *its* consumers), and the only anticompetitive conduct alleged relates to an alleged foreclosure of competition in the (inaccurately defined) market for *only* Apple products. The differing market scope makes *Microsoft* an inapt comparator.
210. *Second*, much of the challenged conduct involved Microsoft’s efforts, through contractual and technical restrictions, to force third parties to use and sell its intellectual property. See *United States v. Microsoft Corp.*, 253 F.3d 34, 59–78 (D.C. Cir. 2001). Here, however, the facts are inverted—Apple is not *forcing* Epic to use its intellectual property; rather, Apple makes that intellectual property available to Epic and other developers on transparent terms. Unlike in *Microsoft*, Epic is seeking to *compel* Apple to make its intellectual property available to it on terms dictated by Epic. The anticompetitive conduct alleged in *Microsoft* is far afield from the terms of access to Apple’s own intellectual property that are at issue here.
211. *Third*, whereas Microsoft urged that its intellectual property rights (namely, its copyrights) gave it “an absolute and unfettered right to use its intellectual property as it wishes,” *United States v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001), Apple has made no such claim here. Rather, the crux of Apple’s argument, detailed below, see *infra* § III.B.i.b (¶¶ 246–83), is that a patent or copyright holder has a right to *exclude* others from using its work, or to set terms and conditions for the licensing of that work. Microsoft sought to insulate itself from liability for all conduct related to the exercise of its intellectual property rights, whereas Apple has invoked only the indisputable maxim that a rights holder has the right to license or *not* license its work to others on terms that it sets.
212. The D.C. Circuit in *Microsoft* in fact supports Apple’s legal arguments here, because the court recognized that a firm may take steps to protect its intellectual property. With respect to “[t]he only license restriction Microsoft seriously defend[ed] as necessary to prevent a ‘substantial alteration’ of its copyrighted work,” the court *agreed* that such a restriction was “not an exclusionary practice that violates § 2 of the Sherman Act,” because it validly protected Microsoft’s copyright from being exploited by original equipment manufacturers. *United States v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001). And the D.C. Circuit rejected the “second variation” of Microsoft’s “copyright defense” only because Microsoft “never substantiate[d]” its claim that other restrictions were necessary to protect its intellectual property rights. *Id.* Thus, *Microsoft* actually *supports* the notion that a firm may take measures to protect its intellectual property rights from unlawful exploitation, provided that (as here) the firm introduces evidence to connect its intellectual property rights with the challenged conduct, which Microsoft did not do.
213. *Third*, the D.C. Circuit found in numerous places that Microsoft had failed to offer *any* procompetitive justifications for its conduct. See *United States v. Microsoft Corp.*, 253

F.3d 34, 72 (D.C. Cir. 2001) (“Microsoft had an opportunity to, but did not, present the District Court with evidence demonstrating that the exclusivity provisions have some such procompetitive justification.”); *id.* at 74 (“Microsoft offers no procompetitive justification for the exclusive dealing arrangement.”); *id.* at 76 (“Microsoft offered no procompetitive justification for the default clause”); *id.* at 77 (“Microsoft offers no procompetitive explanation for its campaign to deceive developers.”); *id.* (“Microsoft does not . . . offer any procompetitive justification for pressuring Intel not to support cross-platform Java.”). Here, by contrast, Apple has set forth a host of legitimate procompetitive justifications for its conduct, and there is no evidence that these justifications are pretextual. *See infra* § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–67). The complete absence of *any* procompetitive justifications for the conduct challenged in *Microsoft* distinguishes this case.

214. *Fourth*, the decision in *Microsoft* was issued at an early stage of the information economy, when the intersection between antitrust law and technology was still being explored. Epic’s expert, Dr. Evans, has himself argued that “the economic analysis presented in support of [the government’s claim] was internally inconsistent, based on unsound economic theory, and conflicted with the facts.” David S. Evans et al., *An Analysis of the Government’s Economic Case in U.S. v. Microsoft*, *The Antitrust Bulletin* 163, 167 (2001). Dr. Evans has further criticized the absence of “evidence in the record that the actions the district court found unlawful had a material effect on Netscape’s share of browser use, or significantly harmed consumers.” *Id.*
215. In any event, anticompetitive conduct must necessarily be evaluated on the facts of the case—a blanket comparison to *Microsoft* and the host of anticompetitive conduct alleged there is inappropriate. That is made clear by the fact that the D.C. Circuit’s chief criticism of Microsoft’s case was its failure to offer any evidence of legitimate business justifications for its conduct. Instead, the proper course of analysis is to hold Epic to its burden of proof on *each* of the elements for *each* of its claims. That exercise confirms what the broad principles of antitrust law already make clear: There is *no* legal support for the novel and unwarranted expansion and reinterpretation of the antitrust laws that Epic urges here.

i. Sherman Act Section 2 – Monopoly Maintenance in the “iOS App Distribution Market” (Epic Count 1)⁹

216. In Count 1, Epic alleges that Apple engaged in unlawful monopolization of the “iOS App Distribution Market” because it “prevents the distribution of iOS apps through means other than the App Store and prevents developers from distributing competing app stores to iOS users.” Dkt. 1 ¶ 188.
217. In order to prevail on a claim of unlawful monopolization under Section 2 of the Sherman Act, a plaintiff must show: “(a) the possession of monopoly power in the relevant market; (b) the willful acquisition or maintenance of that power; and (c) causal antitrust injury.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted).

⁹ The elements of unlawful monopoly maintenance under Section 2 of the Sherman Act are addressed in § 7, page 51 of the Joint Elements Submission.

Causal antitrust injury is an element common to all antitrust claims and is addressed above. *See supra* § III.A.iii (¶¶ 183–86).

218. As the Ninth Circuit recently explained, “proving an antitrust violation under [Section] 2 of the Sherman Act is more exacting than proving a [Section] 1 violation,” and “a court [that] finds that the conduct in question is not anticompetitive under § 1 . . . need not separately analyze the conduct under § 2.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991–92 (9th Cir. 2020); *see also Williams v. I.B. Fischer Nev.*, 999 F.2d 445, 448 (9th Cir. 1993) (conduct that fails to establish a claim under Section 1 generally “cannot be used as the sole basis for a § 2 claim” (quotation marks omitted)); *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 543 (9th Cir. 1983) (conduct that could not support a Section 1 claim “is of no assistance” in attempt to state Section 2 claim), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987).
219. Because Count 1 and Count 3 (regarding unreasonable restraints on trade under Section 1) are premised on alleged restraints in “the [DPLA] and the terms of Apple’s App Store Review Guidelines unreasonably” and their alleged effects on “competition in the iOS App Distribution Market,” Dkt. 1 ¶ 211; *see also id.* ¶¶ 129–34 (Epic’s overlapping allegations of alleged contractual restraints), Count 1 fails for the same reasons that Count 3 fails, *see infra* § III.C.ii (¶¶ 487–530).
220. In any event, Epic’s Count 1 fails on its own terms.

a. Apple Lacks Monopoly Power¹⁰

221. Epic’s unlawful monopolization claim fails at the outset because Apple lacks monopoly power (or market power) in the relevant product market: digital game transactions.
222. Monopoly power is “the power to control prices or exclude competition.” *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966) (quotation marks omitted). “[A] firm is a monopolist if it can profitably raise prices substantially above the competitive level,” *United States v. Microsoft Corp.*, 253 F.3d 34, 51 (D.C. Cir. 2001), “without inducing so rapid and great an expansion of output from competing firms as to make the supracompetitive price untenable,” *Harrison Aire, Inc. v. Aerostar Int’l, Inc.*, 423 F.3d 374, 380 (3d Cir. 2005) (quotation marks omitted).
223. Section 2 monopolization claims “must be judged on a market-by-market basis.” *United States v. Syufy Enters.*, 903 F.2d 659, 672 n.22 (9th Cir. 1990); *see also Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965) (“Without a definition of [the] market there is no way to measure [the defendant’s] ability to lessen or destroy competition.”).
224. A plaintiff can prove monopoly power directly or indirectly. *United States v. Microsoft*, 253 F.3d 34, 51 (D.C. Cir. 2001). “[D]irect evidence” of monopoly power includes “evidence of restricted output and supracompetitive prices.” *Rebel Oil Co. v. Atl. Richfield*

¹⁰ Monopoly power is addressed in § 7.1, pages 52–54 of the Joint Elements Submission.

Co., 51 F.3d 1421, 1434 (9th Cir. 1995). “Because such direct proof is only rarely available, courts more typically examine market structure in search of circumstantial evidence of monopoly power. Under this structural approach, monopoly power may be inferred from a firm’s possession of a dominant share of a relevant market that is protected by entry barriers.” *Microsoft*, 253 F.3d at 51 (D.C. Cir. 2001) (citations omitted).

225. To show monopoly power using indirect evidence, a plaintiff must: “(1) define the relevant market; (2) show that the defendant owns a dominant share of that market; and (3) show that there are significant barriers to entry and show that existing competitors lack the capacity to increase their output in the short run.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). The “Supreme Court has never found a party with less than 75% market share to have monopoly power.” *Kolon Indus. Inc. v. E.I. DuPont de Nemours & Co.*, 748 F.3d 160, 174 (4th Cir. 2014).
226. Courts also consider “structural characteristics of markets in determining whether or not a firm has monopoly power, including the relevant size and strength of competitors, ... probable development of the industry, . . . [and] potential competition.” ABA Section of Antitrust Law, *Antitrust Law Developments* 236 (8th ed. 2017). For example, in two-sided platform markets “[i]ndirect network effects [] limit [a] platform’s ability to raise overall prices and impose a check on its market power.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018).
227. A dominant market share is not the same as market power, but rather may show “whether the defendant possesses sufficient leverage to influence marketwide output.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1437 (9th Cir. 1995). “With a dominant share of the market’s productive assets, a firm may have the market power to restrict marketwide output and, hence, increase prices, as its rivals may not have the capacity to increase their sales quickly to make up for the reduction by the dominant firm.” *Id.*
228. Because “[a] mere showing of substantial or even dominant market share alone cannot establish market power sufficient to carry out a predatory scheme,” Epic “must show that new rivals are barred from entering the market and show that existing competitors lack the capacity to expand their output to challenge the predator’s high price.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438–39 & n.10 (9th Cir. 1995) (“telltale factors” include “market share, entry barriers and the capacity of existing competitors to expand output”). Entry barriers are market characteristics “that prevent new rivals from timely responding to an increase in price above the competitive level.” *FTC v. Qualcomm Inc.*, 411 F. Supp. 3d 658, 684 (N.D. Cal. 2019) (quotation marks omitted), *rev’d on other grounds*, 969 F.3d 974 (9th Cir. 2020). They include “additional long-run costs that were not incurred by incumbent firms but must be incurred by new entrants,” or “factors in the market that deter entry while permitting incumbent firms to earn monopoly returns.” *L.A. Land Co. v. Brunswick Corp.*, 6 F.3d 1422, 1427–28 (9th Cir. 1993) (quotation marks omitted).

Apple Lacks Monopoly Power in the Relevant Market for Digital Game Transactions

229. There is no direct or indirect evidence indicating that Apple has monopoly power in the relevant market. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant market is digital transactions between game app developers and consumers of game app content. And Apple does not own a dominant share of that market. Rather, Apple’s share of the digital game transactions market is relatively small, between 23.3% and 37.5%. FOF ¶ 493.2. With no evidence of monopoly power or even market power, Epic’s Section 2 monopolization claim fails at the start.
230. Nor is there any evidence of supracompetitive pricing that would constitute direct evidence of monopoly power. The commission Apple charges developers—generally 30%, and lower in many circumstances—is in line with other platforms that undisputedly compete with one another (and with Apple). *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). Many other platforms—including the largest competitors in the market for digital game transactions—have a similar payment structure and the same base level of commission. Most notable here, the app transaction platforms operated by Google and Microsoft; the transaction platforms that are part of the Xbox, PlayStation, and Nintendo ecosystems; and Steam, the largest PC-game distribution platform, all charge a 30% base commission. FOF ¶ 472. In many ways, even Apple’s 30% commission rate is actually *below* the competitive rate, because many of the platforms charging the same commission (including those through which Epic distributes *Fortnite*) do not provide the same services to developers or the nearly one billion consumers worldwide as Apple does. FOF ¶ 473.
231. Before the introduction of the App Store, software developers, including game app developers, received a smaller portion (at most, 30%) of the revenue share. FOF ¶ 469. Since then, competing transaction platforms and other competing services have entered the marketplace, including Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, online game streaming services, and, of course, EGS. FOF ¶ 494.1. In addition, many game streaming services, including Amazon Luna, Google Stadia, Microsoft xCloud, NVIDIA GeForce Now, and PlayStation Now, now compete with Apple. FOF ¶ 502.
232. Apple’s profit margins do not establish monopoly power. “Many courts have disparaged the evidentiary value of high profits to indicate monopoly power.” *High Tech. Careers v. San Jose Mercury News*, No. 90-CV-20579, 1995 WL 115480, at *3 (N.D. Cal. Mar. 14, 1995); *see also In re IBM Peripheral EDP Devices, Antitrust Litig.*, 481 F. Supp. 965, 981 (N.D. Cal. 1979) (“[T]he inference that a defendant that enjoys healthy profits only does so because of an unhealthy market structure is not a strong one.”); *Forsyth v. Humana, Inc.*, 827 F. Supp. 1498, 1511 (D. Nev. 1993) (“[P]roof of excessive profits . . . may be misleading and subject to several interpretations.”). That is because “competitive firms may be highly profitable merely by virtue of having low costs as a result of superior efficiency.” *Blue Cross & Blue Shield United of Wis. v. Marshfield Clinic*, 65 F.3d 1406, 1412 (7th Cir. 1995).
233. Economic literature supports this skepticism. An economic methodology that focuses on “accounting profits or markups as an indicator of market power” is “far from ideal.” Jonathan B. Baker & Timothy F. Bresnahan, *Empirical Methods of Identifying and Measuring Market Power*, 61 *Antitrust L.J.* 3, 5 (1992); *see also* Richard Schmalensee,

Another Look at Market Power, 95 Harv. L. Rev. 1789, 1805 (1982) (“There are . . . serious problems with using profitability to gauge market power.”). “[H]igh profits or margins might reflect efficiencies, such as low costs or superior product design, rather than market power.” Baker & Bresnahan, *supra*, at 5. Moreover, “the way accountants spread costs over time and adjust asset values for depreciation frequently causes accounting measures of profit to bear little relation to those underlying economic concepts that might in principle be related to market power.” *Id.*; see also Schmalensee, *supra*, at 1805 (“[I]t is very difficult in practice to measure actual profitability, and it may be even more difficult to measure excess profits.”). “These problems loom so large that antitrust today does not rely heavily on profitability measures in making inferences about market power.” Baker & Bresnahan, *supra*, at 5.

234. The commission rate of 12% that Epic has set for EGS does not prove that Apple’s commission is supracompetitive. While Epic’s commission is lower than Apple’s, it does not offer all the services that Apple provides. EGS is essentially a storefront—it lacks the integrated features that make the App Store a desirable platform for consumers and developers.
235. Likewise, the commission rates of payment processors identified by Epic are not evidence that Apple’s commission is supracompetitive. Again, the benefits conferred by Apple in exchange for its commission are significant. It is not merely a “payment processing” fee—indeed, Epic’s own CEO conceded that commissions paid to game app transaction platforms do not simply compensate for the cost of processing payments. FOF ¶ 251.3. Rather, in exchange for its commission, Apple provides developers a marketplace to transact with more than a billion consumers who trust the App Store and trust the content it offers. Apple also provides access to and use of its intellectual property, centralized and secure payment processing, bandwidth, customer service, programming, online stores, the platform (including security protections and operation of on-device functionality), development tools, constant marketing, reviews and curation of apps, tools for testing, campaign management, anti-fraud measures, and more. FOF ¶¶ 691–93. Apple has developed a comprehensive platform for the distribution of apps and facilitation of digital transactions between consumers and developers—its competitive commission rate represents Apple’s commission for *all* of those services, not just the processing of payments for digital transactions.
236. Additionally, there is no evidence of “significant barriers to entry” or that “existing competitors lack the capacity to increase their output in the short run.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). EGS, Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, and online game streaming services have all started to facilitate transactions for digital content following the creation of the App Store. FOF ¶¶ 494.1, 502. Given the entry of these competing platforms and streaming services, it is clear that there are no significant barriers to entry that would suggest market power or monopoly power. FOF ¶ 494.2

Apple Lacks Monopoly Power Even Under Epic’s Erroneous Market Definition

237. Epic has posited a market definition that is restricted to the distribution of iOS apps—and that is not limited to game apps—essentially attempting to define the market in such a way as to vest Apple with a monopoly by definition.
238. Even under Epic’s definition of the “iOS App Distribution” market, Apple lacks monopoly power for Section 2 purposes.
239. *First*, there is no evidence of restricted output or increased prices. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1437 (9th Cir. 1995) (“With a dominant share of the market’s productive assets, a firm may have the market power to restrict marketwide output and, hence, increase prices . . .”). In fact, the evidence is squarely to the contrary. The App Store has grown by leaps and bounds since its creation in 2008, and continues to grow and evolve. FOF ¶ 575. Output—whether measured in terms of total apps or app transactions—has steadily increased. FOF ¶¶ 575–76. Meanwhile, the effective commission rate of the App Store has gone *down*, as Apple has offered certain categories of developers lower commission rates. FOF ¶ 569. Apple has thus acted in the exact *opposite* way one would expect a monopolist to act—it has reduced prices and increased output.
240. *Second*, consumers and developers often “multi-home” across multiple devices and digital transaction platforms, meaning that they have access to games across a variety of devices, not just iOS-compatible devices. FOF ¶¶ 358–63. As discussed above, *see supra* § II.B.ii.a (¶¶ 39–45), this fact shows why Epic’s market definition is unduly narrow; but it also shows that even if the market were construed as Epic proposes, Apple would lack market power because it is subject to competitive constraints.
241. Indeed, the fact that Apple charges the same 30% commission rate (and actually lower in many instances) that other app distributors and game app platforms do is evidence that these platforms compete with each other. According to Epic’s (erroneous) application of the hypothetical monopolist test, Apple *could* raise the effective downstream prices to consumers by 5% and remain profitable, but Epic offers no persuasive reason for why Apple has not done so. The answer of course, is that Apple is constrained by competition.
242. *Third*, Apple’s pricing also is constrained by other app distribution options available on iOS devices. Since the launch of the iPhone (and even before the App Store), developers have been able to offer web apps, accessible through the Safari web browser on the iPhone. FOF ¶ 548. That functionality was not removed with the launch of the App Store—developers still were (and are) able to offer web apps as an alternative (or in addition) to native iOS apps. *Id.* The DPLA acknowledges this, as it notes that “there is always the open Internet” for the distribution of apps. FOF ¶ 529.2 New game streaming services are beginning to take advantage of this feature to offer a variety of games to iOS users *without* going through the App Store. FOF ¶¶ 503.1–503.2. Indeed, *Fortnite* itself is expected to be available (through Nvidia’s GeForce Now service) this year. FOF ¶ 542.1. The availability of these alternatives constrains Apple’s market power in distributing native iOS apps through the App Store. FOF ¶ 504.

243. *Fourth*, consumers can and do switch away from iOS devices to Android devices. FOF ¶ 399.2. Consumers are not locked into iOS once they purchase an iPhone, and they can and do switch to phones with new operating systems with some frequency. *Id.* While switching devices is not as simple as switching shampoos, that does not mean there is no competition or that consumers are “locked in.” *See, e.g., Commercial Data Servers, Inc. v. Int’l Bus. Mach. Corp.*, 262 F. Supp. 2d 50, 69 (S.D.N.Y. 2003) (“The fact that existing IBM customers would need to spend money to migrate to another computing system does not establish ‘lock-in.’”). No one would say, for instance, that two car companies do not compete with one another just because buying a new car is a substantial investment of resources. *See, e.g., Town Sound & Custom Tops, Inc. v. Chrysler Motors Corp.*, 959 F.2d 468, 480 (3d Cir. 1992) (recognizing that “auto manufacturers are perfectly capable of producing functionally similar and competitive products” to one another). Consumers and developers have knowledge of the relative qualities and prices of the products *ex ante* (and Apple’s commission has not gone up since the App Store was released) and can make informed purchasing decisions. And, like vehicles and many other commodities, phones and operating systems have to be updated and replaced with at least some regularity, giving consumers periodic opportunities to reevaluate their purchasing decisions.
244. *Finally*, developers who choose to take advantage of Apple’s proprietary tools and distribute apps through the App Store have access to alternative business models besides paid downloads and in-app purchases, constraining Apple’s ability to charge supracompetitive prices for its services. Developers have many options for monetizing apps that avoid Apple’s commission entirely, including selling in-app currency through other platforms (including on a web browser), selling subscriptions on other platforms, or using in-app advertising. FOF ¶ 93. The vast majority of apps—83%—on the App Store are free. FOF ¶ 551. While some developers may prefer to avoid in-app advertising, that alternative nonetheless restricts the commission rate that Apple can charge developers, dispelling the notion that it has unfettered dominion over the prices it charges through the App Store.
245. Thus, regardless of the proper market definition, Apple does not have market power (much less monopoly power) in any relevant product market, and Epic cannot prevail on its Section 2 monopolization claim.

b. Apple Has Not Engaged in Exclusionary Conduct with Respect to App Distribution¹¹

246. Even assuming that Apple has monopoly power in a relevant product market, Epic’s monopoly maintenance claim for the distribution of iOS apps nonetheless fails because Epic has failed to show that Apple is engaged in exclusionary conduct.
247. A plaintiff alleging a Section 2 monopolization claim must prove “the willful acquisition or maintenance of [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.” *United States*

¹¹ The requirement of exclusionary conduct is addressed in §§ 7.2–7.2.1, pages 55–58 of the Joint Elements Submission.

v. Grinnell Corp., 384 U.S. 563, 570–71 (1966). The plaintiff must therefore show “anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted).

248. In a Section 2 monopoly maintenance case, “the plaintiff is obliged to make out a prima facie case that the monopolist has engaged in ‘exclusionary’ conduct,” and “[a]t that point the proof burden ordinarily shifts to the defendant to offer a ‘justification’ for the conduct.” 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.). Once a plaintiff has already established a “prima facie case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a ‘procompetitive justification’ for its conduct.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (quoting *United States v. Microsoft*, 253 F.3d 34, 59 (D.C. Cir. 2001)). “[T]he burden does not shift to [the defendant] to provide such justifications unless and until the [plaintiff] meets its initial burden of proving anticompetitive harm.” *Id.* at 996. Here Epic is unable to meet its initial burden of proving anticompetitive harm for a number of reasons.

The Technical Design of iOS Cannot Form the Basis for Antitrust Liability

249. Apple did not engage in exclusionary conduct by making the design decision to prevent sideloading of native apps onto iOS devices. The basis for Epic’s Section 2 monopolization claim under Count 1 is that Apple has designed iOS in such a way as to prevent firms like Epic from offering a competing app store for the distribution of iOS apps, and has enforced those technical restrictions through the DPLA. *See* Dkt. 1 ¶¶ 184–92. Epic’s allegations thus depend on the notion that Apple’s design and implementation of its own intellectual property can constitute exclusionary conduct. That theory fails as a matter of law.
250. For purposes of establishing exclusionary conduct, “the introduction of technologically related products, even if incompatible with the products offered by competitors, is alone neither a predatory nor anticompetitive act.” *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 544 (9th Cir. 1983), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987); *see also United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) (“As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm’s product design changes.”).
251. That is because “[a] monopolist, no less than any other competitor, is permitted and indeed encouraged to compete aggressively on the merits, and any success it may achieve solely through the process of invention and innovation is necessarily tolerated by the antitrust laws.” *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 544–45 (9th Cir. 1983) (quotation marks omitted), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987); *see also Cal. Computer Prods., Inc. v. Int’l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979) (a market participant has “the right to redesign its products to make them more attractive to buyers whether by reason of lower manufacturing cost and price or improved performance”).

252. Accordingly, as a matter of law, “a design change that improves a product by providing a new benefit to consumers does not violate Section 2 absent some associated anticompetitive conduct.” *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998–99 (9th Cir. 2010). “If a monopolist’s design change is an improvement, it is necessarily tolerated by the antitrust laws, unless the monopolist abuses or leverages its monopoly power in some other way when introducing the product.” *Id.* at 1000 (quotation marks and citation omitted). Apple’s design of iOS and the App Store precluding third-party app stores (and the attendant problems of control and interoperability), in order to protect its own intellectual property, the reliability of the hardware and software, and the security and privacy of user data, is procompetitive. It was a conscious and intentional improvement over the macOS operating system that predated it, as demonstrated by iOS’s track record for low malware and high privacy protections.
253. In *United States v. Microsoft*, the court considered whether Microsoft was unlawfully maintaining a monopoly in the personal computer market through legal and technical restrictions that it had imposed on manufacturers and users. *See United States v. Microsoft Corp.*, 253 F.3d 34, 47 (D.C. Cir. 2001). As relevant here, the D.C. Circuit rejected the argument that Microsoft engaged in anticompetitive conduct when it designed a Java Virtual Machine (“JVM”), which did not work with an operating system developed by a rival. *Id.* at 75. The court explained that “a monopolist does not violate the antitrust laws simply by developing a product that is incompatible with those of its rivals.” *Id.*
254. Here, what Epic challenges is a technical design feature of iOS and the App Store, namely, Apple’s “walled garden.” Apple designed and built iOS and the App Store so that consumers could safely download, install, and operate apps from the App Store. FOF ¶¶ 68–75. This was a thoughtful and conscious design choice made by Apple, based on its decades of experience with macOS in the desktop environment. FOF ¶ 70. Apple sought to leverage that experience—and refine the macOS design for mobile phone use—by designing iOS with new security and reliability protections that would enhance consumers’ experience. FOF ¶ 72. Indeed, this is one of the bases on which Apple *competes* with other digital transaction platforms.
255. The contractual and technical restrictions that Epic challenges as anticompetitive do not constitute exclusionary conduct as a matter of law. iOS has never allowed third-party app stores or sideloaded apps on iOS or the App Store. And Apple has not never allowed consumers to download native apps except through the App Store, but rather since its inception, the App Store has been designed to permit Apple to curate the flow of native apps to consumers. FOF ¶ 396. In fact, iOS prevented “sideloading” even *before* the App Store was launched. FOF ¶ 73. Distributing apps through the App Store also makes it feasible and efficient to apply and implement iOS updates, whereas third-party app stores would present continued problems of interoperability. As addressed in more detail below, *see infra* § III.B.i.d (¶¶ 299–317), that design feature offers many procompetitive benefits, including giving consumers a secure platform to download, install, and operate apps, and giving developers a reliable way to distribute apps to Apple’s many consumers, FOF ¶¶ 581–95. Regardless of whether Epic believes these technical restrictions are the *only* way to benefit consumers, there is no question that consumers and developers alike derive

benefits from the design of iOS and the App Store. And that fact alone means that those restrictions do not constitute exclusionary conduct.

Apple Has a Right to Set Terms of Access to Its Intellectual Property

256. The technical and contractual restrictions that Epic challenges also do not constitute exclusionary conduct because they are merely terms of a license to access and use Apple’s proprietary intellectual property. All developers, including Epic, who wish to distribute apps through the App Store must sign the DPLA, which expressly grants developers “a limited license to use the Apple Software and Services provided to [developers] under this Program to develop and test [developer’s] Applications on the terms and conditions set forth in this Agreement.” FOF ¶ 103. The contract thus expressly contemplates that developers are seeking a “license” to use Apple’s intellectual property. What Epic seeks to do through this lawsuit is to access and benefit from Apple’s intellectual property for only a nominal developer fee of \$99, rather than for the additional 30% commission rate it agreed to.

257. As the creator of iOS, as well as the SDKs, APIs, and other tools that work with iOS, Apple is not obliged to provide access to its intellectual property on the terms demanded by Epic and does not engage in exclusionary conduct when it sets terms of access to its intellectual property.

258. “[M]arket power does not ‘impose on the intellectual property owner an obligation to license the use of that property to others.’” *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (quotation marks omitted). And because intellectual property carries “the legal right to refuse to license . . . , the existence of a predicate condition to a license agreement cannot state an antitrust violation.” *Townshend v. Rockwell Int’l Corp.*, No. 99-CV-400, 2000 WL 433505, at *8 (N.D. Cal. Mar. 28, 2000). Epic must thus prove not just that Apple has imposed licensing terms, but also that the challenged restraints had an “actual [anticompetitive] effect on competition.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 989 (9th Cir. 2020) (quotation marks omitted).

259. iOS is protected by numerous intellectual property rights, and federal law authorizes Apple to exclude others from using those rights. If Apple chooses to allow third parties to access and use that intellectual property protecting iOS and the related hardware and software, it may establish the terms of such use. Apple has invested billions of dollars into the development of iOS and the App Store. FOF ¶ 169. It holds numerous intellectual property rights related to iOS, the app developer tools, the App Store, and the underlying hardware, and it has chosen to license certain of those rights out to developers for the purpose of growing the App Store and providing consumers the best experience. FOF ¶¶ 89.1–89.2. Developers who want to native iOS apps *must* use Apple’s intellectual property in order for those apps to be compatible with iOS and usable for consumers. FOF ¶ 89. Apple grants developers a limited license for developers to use its intellectual property in the DPLA, but sets forth numerous terms and conditions on that access, including, for example, the requirement that developers not offer their apps through platforms that facilitate the “sideloading” of apps onto iPhones. FOF ¶¶ 105–107. All developers, including Epic,

who wish to develop native apps for iOS must agree to those terms before Apple will license its intellectual property.

260. As a matter of law, Apple is permitted to set conditions for access to its intellectual property. *See Townshend v. Rockwell Int'l Corp.*, No. 99-CV-400, 2000 WL 433505, at *8 (N.D. Cal. Mar. 28, 2000). “[T]he antitrust laws do not negate the patentee’s right to exclude others from patent property.” *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999). “The commercial advantage gained by new technology and its statutory protection by patent do not convert the possessor thereof into a prohibited monopolist.” *Abbott Labs. v. Brennan*, 952 F.2d 1346, 1354 (Fed. Cir. 1991).
261. A patent accordingly “empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly,” *Brulotte v. Thys Co.*, 379 U.S. 29, 33 (1964), and a patent owner may refuse to license an invention altogether, *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1216 (9th Cir. 1997) (noting that it could find “no reported case in which a court has imposed antitrust liability for a unilateral refusal to sell or license a patent”).
262. Because Apple is not obliged to license its intellectual property *at all*, and is permitted to set terms and conditions on access to the intellectual property it does choose to license, it necessarily follows that Apple is not (and cannot be) required to license its intellectual property on terms that Epic believes would be more favorable to it. *See, e.g.*, U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Guidelines for the Licensing of Intellectual Property* § 2.1 (2017) (“The antitrust laws generally do not impose liability upon a firm for a unilateral refusal to assist its competitors, in part because doing so may undermine incentives for investment and innovation.”).
- 262.1 Epic’s “all-or-nothing” approach is legally deficient. *See* Trial Tr. 1688:17–22 (Evans) (Dr. Evans agreeing that, in his view, “the only two competitive paths open to Apple were to license developers to use iOS to compete with the App Store when 2010 rolled around or never to license developers at all”). A firm does not lose its intellectual property rights when it licenses them. The antitrust laws “ordinarily will not require the owner of intellectual property to create competition in its own technology.” U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Guidelines for the Licensing of Intellectual Property* § 3.1 (2017). And the right to exclude entirely—which Epic does not dispute—necessarily entails the right to exclude partially: “Because a patent owner has the legal right to refuse to license his or her patent on any terms, the existence of a predicate condition to a license agreement cannot state an antitrust violation.” *Townshend v. Rockwell Int'l Corp.*, No. 99-CV-400, 2000 WL 433505, at *8 (N.D. Cal. Mar. 28, 2000). For example, the patentee’s “right to select its licensees, the decision to grant exclusive or non-exclusive licenses or to sue for infringement, and the pursuit of optimum royalty income, are not of themselves acts in restraint of trade.” *Genentech, Inc. v. Eli Lilly & Co.*, 998 F.2d 931, 949 (Fed. Cir. 1993), *abrogated on other grounds by Wilton v. Seven Falls Co.*, 515 U.S. 277 (1995). Apple was under no obligation to create competition on iOS by opening it up prior to the App Store, and did not create such an obligation by improving its existing product.

Apple Has No Duty to Deal on Terms Demanded by Epic

263. Epic’s theory of exclusionary conduct fails for an additional, independent reason: Apple cannot be held to have engaged in exclusionary conduct based on a refusal to deal with Epic on its preferred terms, i.e., a claim that Apple is obliged to deal with its competitors (or would-be competitors) so as not to foreclose competition in the relevant market.
264. As a general matter, a firm does not engage in exclusionary conduct merely because it elects not to deal with a competitor, or elects not to deal with a competitor on that competitor’s preferred terms. *See Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004). “[T]here is no duty to deal under the terms and conditions preferred by a competitor’s rivals.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (alteration and quotation marks omitted). Without such a duty, any claim premised on a rival’s refusal to cooperate with the plaintiff necessarily fails for lack of exclusionary conduct. *See Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 451 (2009). And so long as “a firm has no antitrust duty to deal with its competitors . . . , it certainly has no duty to deal under terms and conditions that the rivals find commercially advantageous.” *Id.* at 450.
- 264.1 Dr. Athey expressly disagreed with this law, stating that a refusal to deal is exclusionary conduct. Trial Tr. 1811:4–7 (Athey).
265. The only possible exception arises under *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), in which the defendant, who owned three out of the four ski resorts in the relevant market, discontinued a joint lift-ticket package with its lone competitor and then refused to sell the competitor any lift tickets for the purpose of bundling lift tickets. *Id.* at 592–94. *Aspen Skiing*—like all of Epic’s theories of liability—is at the outer bounds of antitrust law. *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) (“*Aspen Skiing* is at or near the outer boundary of § 2 liability.”). It provides only a “limited exception” to the general rule that firms have no obligation to deal with their rivals.
266. As an initial matter, of course, Apple has *not* refused to deal with Epic. It has removed the *Fortnite* app from the App Store and expelled Epic from the developer program for breach of the DPLA and the App Store Review Guidelines, which are rules that apply to all developers. FOF ¶ 106. Apple has represented in open court that it would accept Epic back into the developer program if Epic reversed the changes to *Fortnite* and agreed to abide by the terms of the DPLA. *See* Hr’g Tr. 22:20–23:1 (Aug. 24, 2020). Apple simply has refused to deal under the terms unilaterally demanded by Epic.
267. In any event, to establish a duty to deal under *Aspen Skiing*, a plaintiff must prove at a minimum that (1) there was a unilateral termination prior, long-term, and profitable voluntary course of dealing with the plaintiff on terms comparable to those that it now demands; (2) that “the only conceivable rationale or purpose” for terminating that course of dealing “is ‘to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition’”; and (3) “the refusal to deal involves products that the defendant already sells in the existing market to other similarly situated customers.”

Aerotec Int'l, Inc. v. Honeywell Int'l, Inc., 836 F.3d 1171, 1184 (9th Cir. 2016); *see also* *FTC v. Qualcomm Inc.*, 935 F.3d 752, 755 (9th Cir. 2019) (“The Supreme Court recognized a very limited exception to that general rule [of no duty to deal] when a monopolist terminated a voluntary and profitable course of dealing with a competitor and sacrificed short-term benefits to exclude competition in the long run.”).

268. To satisfy the first element, Epic must prove that a preexisting course of dealing was both profitable to Apple and operated for a long term. *See, e.g., Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) (dismissing claim because the defendant had not “voluntarily engaged in a course of dealing with its rivals”). And Epic must further prove that Apple refused to continue to do business on the parties’ preexisting terms. *See Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016). Absent proof that Apple offers the services at issue on the terms demanded by Epic “in the existing market to other similarly situated customers,” there is no basis to show that Apple has “single[d] out” Epic “for anticompetitive treatment.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 994–95 (9th Cir. 2020) (quotation marks omitted).
269. Epic has made no effort to satisfy the first element. The App Store has been a “walled garden” since its inception in 2008. FOF ¶ 396. Apple has never offered to Epic or any other developer unfettered access to iOS to distribute apps. At all times, native iOS apps have been distributed through the App Store. Apple thus has not deviated from a preexisting course of dealing, a required element of any refusal-to-deal claim.
270. To satisfy the second element of a duty to deal, Epic must prove that Apple’s refusal to assist Epic was “irrational but for its anticompetitive effect.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1075 (10th Cir. 2013) (Gorsuch, J.). This requires proof not only that Apple “decided to forsake short-term profits,” but also that its “refusal to deal was part of a larger anticompetitive enterprise, such as . . . seeking to drive a rival from the market or discipline it for daring to compete on price.” *Id.*
271. Epic has adduced no evidence that Apple’s conduct sacrificed short-term profits in favor of a long-term anticompetitive advantage. That is, there is no evidence that the contractual or technical restrictions challenged have the effect of reducing Apple’s profits in the short-term so that it may obtain an anticompetitive advantage for a long period of time. And as detailed below, there are numerous procompetitive business justifications for the curated design of the App Store. Absent affirmative evidence from Epic *excluding* the possibility of any procompetitive justifications for the design of the App Store, Epic’s refusal-to-deal claim fails.
272. Nor can Epic prove the third element of a duty to deal—that the alleged refusal involves products that Apple already sells into the market to other similarly situated customers. In *FTC v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020), the Ninth Circuit held that there was duty to deal because there was “no evidence that Qualcomm singles out any specific chip supplier for anticompetitive treatment.” *Id.* at 995. Similarly, here, Epic has not alleged that Apple has singled it out for anticompetitive treatment—it protests only the standard licensing terms applicable to all developers.

273. Epic has thus satisfied none of the elements for establishing a duty to deal, and its claim of exclusionary conduct thus cannot rest on that theory.

Epic’s Framing of a “Conditional Refusal-to-Deal” Does Not Alter the Analysis

274. Seeking to sidestep the mountain of precedent against it, Epic argues that it is *not* bringing a duty-to-deal, refusal-to-deal, or a compulsory licensing claim. Instead, its expert claims that Epic has alleged a tying arrangement or a “conditional refusal-to-deal.” However Epic’s claim is framed, it asks the Court to prohibit Apple from exercising its right to choose with whom it will deal and on what terms. Basic antitrust principles prohibit such a claim except in the narrow circumstances already addressed above.
275. A “conditional refusal to deal” is not a discrete theory in antitrust law; rather, it is a term sometimes used in academic literature to refer to “tying and exclusive dealings.” *Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 453 (7th Cir. 2020) (“[T]ying and exclusive dealing are two common examples” of “conditional refusals to deal” (quotation marks omitted)). Epic does not assert an exclusive dealing theory, and thus its “conditional refusal to deal” label adds nothing to its tying claim. Neither the Supreme Court nor the Ninth Circuit has recognized a discrete antitrust theory of “conditional refusal to deal,” much less affirmed the imposition of liability under such a theory. Once again, Epic is beyond the boundaries of established law.
276. Moreover, framing the claim as a “conditional refusal to deal” does not mean the law regarding refusals to deal is inapplicable. The general rule—subject only to the limited exception outlined above—is that “businesses are free to choose the parties with whom they will deal, *as well as the prices, terms and conditions of that dealing.*” *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 448 (2009) (emphasis added); *see also Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (“[T]here is no duty to deal under the terms and conditions preferred by a competitor’s rivals.” (alteration and quotation marks omitted)). *Aspen Skiing* is the “one, limited exception to this general rule.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 993 (9th Cir. 2020). The law regarding refusal to deal thus encompasses a claim of the type urged here—a desire to *change* the terms on which a licensee does business with its competitors.
277. The Ninth Circuit, in fact, has rejected efforts to extend refusal-to-deal liability beyond the narrow confines of *Aspen Skiing*, expressing “caution about using the antitrust laws to remedy what are essentially contractual disputes between private parties engaged in the pursuit of technological innovation.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 997 (9th Cir. 2020). The Court thus rejected the invitation to “adopt an additional exception, beyond the *Aspen Skiing* exception that the [plaintiff] concede[d] does not apply here, to the general rule that businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing.” *Id.* (quotation marks omitted).
278. What Epic apparently alleges is that Apple must be compelled to make iOS interoperable with third-party app stores (in particular, EGS), but a “company has no general legal duty to assist its competitors, including by making its product interoperable, licensing to

competitors, or sharing information with its competitors.” Final Jury Instructions at 19, *The Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37-YGR (N.D. Cal. Dec. 15, 2014). However it describes its theory of liability, Epic’s claims, if accepted, would require Apple to make affirmative changes to the design of iOS to make it compatible and interoperable with third-party app stores, essentially, a demand that Apple alter its conduct to *assist* Epic. See *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1079 (10th Cir. 2013) (Gorsuch, J.) (“Whether one chooses to call a monopolist’s refusal to deal with a rival an act or omission, interference or withdrawal of assistance, the substance is the same and it must be analyzed under the [refusal-to-deal] test we have outlined.”).

- 278.1 Here again, Dr. Athey disagreed with the law, stating that a failure to provide interoperability can be illegal conduct. Trial Tr. 1861:13–18 (Athey).
279. The Tenth Circuit rejected a similar theory of liability in *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013) (Gorsuch, J.). There, the plaintiff alleged that Microsoft had engaged in anticompetitive conduct by not giving software developers (including the plaintiff) access to “namespace extensions,” which would have made it easier for developers to design software that would be fully interoperable with Microsoft Windows. See *id.* at 1068–69. The district judge granted judgment as a matter of law and the Tenth Circuit affirmed, applying the test from *Aspen Skiing* and rejecting the plaintiff’s attempt to avoid the demanding test for refusal-to-deal liability by recasting its claim as one for “an ‘affirmative’ act of interference with a rival.” *Id.* at 1078. “Traditional refusal to deal doctrine,” the Tenth Circuit explained, “is not so easily evaded.” *Id.*
280. Consistent with this precedent, courts have held that forcing a firm to make its products interoperable with a competitor’s is *anticompetitive*, not *procompetitive*. That is because the “creation of technological incompatibilities, without more, does not foreclose competition; rather, it increases competition by providing consumers with a choice among differing technologies, advanced and standard, and by providing competing manufacturers the incentive to enter the new product market by developing similar products of advanced technology.” *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542 (9th Cir. 1983).
281. Since the admonition in *linkLine* that firms have “no duty to deal under terms and conditions that the rivals find commercially advantageous,” *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 448 (2009), no court has upheld an antitrust claim on the theory that a firm has an obligation to make its platform interoperable with the products of its rivals, as Epic demands here. Just the contrary, courts have consistently held that absent a duty to deal, a firm is free to design its products as essentially “walled gardens” that, like iOS, are not open for use by other firms except on specified terms. See *Bookhouse of Stuyvesant Plaza, Inc. v. Amazon.com, Inc.*, 985 F. Supp. 2d 612, 617, 623 (S.D.N.Y. 2013) (dismissing monopolization claim premised on Amazon’s decision to manage its digital rights such that only books downloaded from Amazon could be read on a Kindle device); *MiniFrame Ltd. v. Microsoft Corp.*, No. 11-CV-7419, 2013 WL 1385704, at *3, *5 (S.D.N.Y. Mar. 28, 2013) (dismissing monopolization claim based on Microsoft’s change to the Windows licensing agreement that rendered a competitor’s previously interoperable product incompatible with Windows), *aff’d*, 551 F. App’x 1 (2d Cir. 2013). As a leading

treatise on intellectual property and antitrust explains, although “[o]ne might . . . imagine that an antitrust argument could be constructed against the use of proprietary interfaces” like iOS because of the power such an interface might have over a market in complementary goods, “[w]e are aware of no such antitrust case,” and “we think no successful antitrust claim along these lines is possible.” Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 12.03[D][1] (3rd ed. 2020 supp.). “The reason has to do with intellectual property. . . . If an interface is itself patentable or copyrightable, compelling access to that interface would present a fundamental conflict between the antitrust and intellectual property regimes because it would compel the licensing of an intellectual property right itself.” *Id.*

282. Epic’s contention that it seeks a right *not* to deal with Apple is incorrect. Epic wants to continue to have access to iOS itself, as well as the IP-protected SDK and thousands of APIs that it and numerous other developers have used to develop iOS-compatible apps. It wants to continue to have access to Apple’s substantial consumer base. It wants to compel Apple to make iOS compatible with apps distributed through EGS. Epic thus wants to *require* Apple to continue to do business with it, but demands that the Court dictate the terms of that arrangement. And the terms that Epic demands are that Apple provide all of these benefits for nothing more than a nominal developer fee, and without otherwise having the ability to set any terms or conditions for the use of its intellectual property. That is evident from Epic’s temporary restraining order and preliminary injunction applications, which sought to enjoin Apple from *terminating* its contracts with Epic. *See* Dkts. 17, 61. Clearly, what Epic seeks is not a right to *not* deal with Apple, but an order directing Apple to deal with Epic on the terms Epic desires. But without a duty to deal, Apple cannot be compelled to do so.
283. Because Apple has no duty to deal with Epic in the first place—much less a duty to alter the terms of its license agreement or its business model to accommodate Epic’s preferred terms of access—it has not engaged in exclusionary conduct that would give rise to a Section 2 monopolization claim.

c. Apple’s Conduct with Respect to App Distribution Does Not Have Anticompetitive Effects¹²

284. Epic’s monopoly maintenance claim fails for the additional reason that there is no evidence that the challenged conduct has anticompetitive effects. As the Ninth Circuit has explained, “[t]o be condemned as exclusionary, a monopolist’s act must have an ‘anticompetitive effect.’” *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001)). Anticompetitive effects are those that “harm the competitive *process* and thereby harm consumers. In contrast, harm to one or more *competitors* will not suffice.” *Id.* (quotation marks and citation omitted). As discussed above, the conduct on which Epic relies for its antitrust claims cannot be considered anticompetitive or exclusionary, and thus cannot have anticompetitive effects.

¹² The requirement of anticompetitive effects is addressed in § 7.2.2, pages 59–61 of the Joint Elements Submission.

285. The plaintiff bears the burden of proving “that the monopolist’s conduct indeed has the requisite anticompetitive effect.” *United States v. Microsoft Corp.*, 253 F.3d 34, 58–59 (D.C. Cir. 2001). As a matter of law, “a plaintiff may not use *indirect* evidence to prove unlawful monopoly maintenance via anticompetitive conduct under § 2.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (emphasis in original). Courts “will not infer competitive injury from price and output data absent some evidence that tends to prove that output was restricted or prices were above a competitive level.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2288 (2018) (quotation marks omitted).
286. Evidence of anticompetitive effects includes “proof of actual detrimental effects on competition, such as reduced output, increased prices, or decreased quality in the relevant market.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (quotation marks, alteration, and citation omitted). Epic cannot prove any of these, as set forth below—output has increased, prices have remained stable or declined, and quality has improved in *any* market proposed by the parties or their experts in this case.
287. Accordingly, Epic “must show that diminished consumer choices and increased prices are the result of a less competitive market due to either artificial restraints or predatory and exclusionary conduct.” *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 990 (9th Cir. 2020). To suffice, anticompetitive effects must be “significant and more-than-temporary.” *Am. Prof’l Testing Serv., Inc. v. Harcourt Brace Jovanovich Legal & Prof’l Publ’ns, Inc.*, 108 F.3d 1147, 1151 (9th Cir. 1997) (quotation marks omitted).
288. In markets that include two-sided transaction platforms, courts must consider “indirect network effects and interconnected pricing and demand,” because “[e]vidence of a price increase on one side of a two-sided transaction platform cannot by itself demonstrate an anticompetitive exercise of market power,” as the defendant’s “business model [may] spur[] robust interbrand competition and . . . increase[] the quality and quantity of [relevant] transactions” when both sides of the market are considered. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286–87, 2290 (2018).
289. “[I]n assessing alleged antitrust injuries, courts must focus on anticompetitive effects ‘in the market where competition is [allegedly] being restrained.’” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) (quoting *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999)).
290. Under the proper market—digital transactions between game app developers and consumers of game app content—Epic has not even *attempted* to make any showing of anticompetitive effects.
291. Even under its erroneous market definition, however, Epic has not met its burden of showing that Apple’s conduct has any anticompetitive effect. Rather, the design of iOS and the App Store *encourages* competition. See *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282 (2018) (recognizing that a defendant’s use of “a different business model” is procompetitive where it spurs “competitive innovations,” increases output, and “improv[es] the quality of the services”). As set forth below, iOS and the App Store have *increased* output, *lowered* prices over time, and *improved* quality.

292. *First*, there is no evidence of reduced output. Rather, the evidence shows that output has dramatically increased, not decreased, over the years. FOF ¶¶ 575–77. Instead of restricting output, the App Store’s business model and the emergence of new competitors have created a market for digital transactions that continues to grow by leaps and bounds each year. *Id.* Total consumer spending on digital game transactions also has increased over time. FOF ¶ 575. The success of the market for digital game transactions belies the assertion that iOS or the App Store has unduly constrained competition.
293. *Second*, prices have not increased. The vast majority of apps—83%—on the App Store are entirely free, and thus digital transactions associated with those apps cost nothing. The design of the App Store has encouraged developers to move from paid-to-download apps to free-to-download apps with paid-for premium content, effectively reducing the price consumers must pay to access apps. FOF ¶¶ 570–71. Apple’s commission rates for digital game transactions are in line with those charged by other game app transaction platforms, and in fact, Apple has lowered its commission rate several times.
294. The fact that Epic and other developers are required to pay a commission to Apple for use of its intellectual property does not render iOS’s design anticompetitive. In *Qualcomm*, the Federal Trade Commission contended that Qualcomm violated the Sherman Act by unreasonably restraining trade in, and unlawfully monopolizing, the cellular modem chip market. *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020). Among other things, the FTC challenged Qualcomm’s patent-licensing royalties and its “no license, no chips” policy, “under which Qualcomm refuses to sell modem chips to OEMs that do not take licenses to practice Qualcomm’s [patents].” *Id.* at 985. The Ninth Circuit held, however, that none of the OEMs challenging the conduct had “articulated a cogent theory of anticompetitive harm” from the challenged conduct, noting that the OEMs had instead only “objected to Qualcomm’s licensing royalty rates, which they have to pay *regardless* of whether they chose to purchase their chips from Qualcomm or a competitor.” *Id.* at 1001. The same is true here—Epic must pay Apple for use of iOS and other proprietary resources, regardless of whether iOS is designed as a “walled garden” or not.
295. *Third*, there has been no decrease in quality. Instead, the quality of apps offered through the App Store has improved over time. There is a great variety today of technologically sophisticated games on the App Store now, demonstrating an increase in quality over time. FOF ¶ 577. In addition, the higher revenue per hour played on iOS devices relative to other game app transaction platforms demonstrate the high-quality consumer experience that the App Store offers. *Id.*
296. *Finally*, far from being *anticompetitive*, the App Store has spurred innovation at competing firms. Since the introduction of the App Store, Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, online game streaming services, and EGS have all emerged as competitors in the market for digital transactions on game apps. FOF ¶¶ 494.1–494.2. Moreover, many game streaming services, such as Amazon Luna, Google Stadia, Microsoft xCloud, Nvidia GeForce Now, and PlayStation Now, have entered the market. FOF ¶¶ 245–245.5.

297. Not only has the introduction of the App Store spurred competitive innovations, it also has increased the quality of products in the relevant market. After Apple pioneered security protocols as part of iOS and the App Store, other platforms have followed suit, adopting similar security measures in recognition of their importance to consumers. FOF ¶¶ 142–43. Consumers thus enjoy a safer experience than they would have if the use of uncured native apps was the norm for these various devices.
- 297.1 Epic introduced at trial—and quizzed Mr. Schiller about—several regulatory investigations instigated by other countries regarding the design of the App Store. *See* Trial Tr. 3049:7–3052:11 (Schiller). The existence of investigations in other countries is not probative of any anticompetitive effects in the United States, *see, e.g., E.I. DuPont De Nemours & Co. v. Kolon Indus., Inc.*, No. 09-CV-58, 2011 WL 13079489, at *1 (E.D. Va. May 16, 2011); *Rambus, Inc. v. Infineon Techs. AG*, 222 F.R.D. 101, 110 (E.D. Va. 2004), particularly in light of the fact that other countries do not necessarily follow U.S. antitrust standards or principles, *see* Anu Bradford, *Antitrust Law in Global Markets*, in *Research Handbook on the Economics of Antitrust Law* 283, 289–95 (Einer Elhauge ed., 2012).
- 297.2 Even further afield is Epic’s counsel’s attempt to cross-examine Mr. Schiller on a decision from *United States v. Apple*, No. 12-CV-2826 (S.D.N.Y.), the resulting monitoring, and deposition testimony from another witness not offered into evidence. *See* Trial Tr. 2983:13–2986:23 (Schiller). Counsel for Epic did not actually admit into *evidence* any relevant information about this prior litigation, presumably because this Court has already held in analogous circumstances that the case is irrelevant to future antitrust suits involving Apple. *See Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37, 2014 WL 12719192, at *3 (N.D. Cal. Nov. 18, 2014). Epic’s counsel’s questions are not evidence, and are irrelevant in any event to the issues here.
298. In short, the evidence shows that Apple’s conduct does not have an anticompetitive effect in any relevant market.

d. Any Allegedly Anticompetitive Conduct Is “Redeemed” by a Multitude of Procompetitive Business Justifications¹³

299. Even if Epic were capable of prevailing over the preceding hurdles, Apple has proffered a number of procompetitive justifications for its conduct here. In a Section 2 monopoly maintenance case, “the plaintiff is obliged to make out a *prima facie* case that the monopolist has engaged in ‘exclusionary’ conduct,” and “[a]t that point the proof burden ordinarily shifts to the defendant to offer a ‘justification’ for the conduct.” 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.). Thus, once a plaintiff has already established a “*prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a ‘procompetitive justification’ for its conduct.” *FTC v.*

¹³ Procompetitive business justifications are addressed in §§ 7.2.3–7.2.5, pages 62–66 of the Joint Elements Submission.

Qualcomm Inc., 969 F.3d 974, 991 (9th Cir. 2020) (quoting *United States v. Microsoft*, 253 F.3d 34, 59 (D.C. Cir. 2001)). But importantly, “the burden does not shift to [the defendant] to provide such justifications unless and until the [plaintiff] meets its initial burden of proving anticompetitive harm.” *Id.* at 996.

300. An “antitrust defendant’s conduct is redeemed by a legitimate business purpose.” *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258 (9th Cir. 1990). Accordingly, there can be no “antitrust liability if there was a legitimate business justification” for the defendant’s conduct. *Oahu Gas Serv., Inc. v. Pac. Res. Inc.*, 838 F.2d 360, 369 (9th Cir. 1988). Apple’s demonstrated legitimate business purposes therefore preclude liability for Epic’s claims.
301. In a case such as this, however, where a plaintiff’s claim is premised on the purported refusal by the defendant to deal with the plaintiff on the terms preferred by the plaintiff, it is the *plaintiff’s* burden to affirmatively establish that there was *no* legitimate business reason for the defendant to refuse to deal with the plaintiff on the plaintiff’s preferred terms. *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 994 (9th Cir. 2020) (noting that “[n]othing in the record or in the district court’s factual findings rebuts” defendant’s legitimate business justifications). Thus, a prior course of dealing cannot be “irrational” for purposes of a refusal-to-deal claim if the defendant acted for a legitimate business reason. *See Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1075 (10th Cir. 2013) (Gorsuch, J.) (quotation marks omitted).
302. Regardless of which party bears the burden at this stage, however, there are numerous procompetitive justifications for the design of iOS and the App Store, including its limitations on the distribution of apps outside of the App Store.
303. There are many types of procompetitive justifications. For example, a defendant’s conduct is justified if undertaken to “enhance[] the quality or attractiveness of a product, increase[] efficiency by reducing costs or otherwise benefit[] consumers.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1220 n.12 (9th Cir. 1997) (quotation marks omitted). “[A] different business model” that spurs “competitive innovations,” increasing output and “improving the quality of the services” is also procompetitive. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282 (2018).

Consumer Safety and Security

304. Ensuring consumer safety or improving product security and privacy are legitimate business justifications for a firm’s conduct. *See Cont’l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 55 n.23 (1977).
305. Apple’s conduct is justified by its interest in ensuring consumer safety or improving product security, privacy, and reliability. Part of the consumer experience that Apple provides is its protection of consumer safety, security, privacy, and reliability, and consumers choose Apple because of its commitment to protecting consumers’ safety, security, privacy, and reliability. Apple continues to invest in protecting consumer safety security, and reliability. FOF ¶ 581. Malicious apps in non-iOS app stores present severe

security issues for non-iOS devices, in addition to, for example, causing crashes or other reliability problems. FOF ¶ 74.5. In light of this risk, Apple has invested considerable resources to ensure that the App Store is the most trusted place to download apps. FOF ¶¶ 582–86. Epic itself has recognized that consumers place a very high value on safety and safeguarding users from malware and privacy breaches. FOF ¶ 590.

306. The security provided by the technical design of iOS also benefits developers. Because Apple puts its reputation behind apps distributed through the App Store, the requirement that every app be reviewed and distributed through the App Store provides credibility to developers. FOF ¶ 587. Consumers trust Apple and are more willing to take a chance on newer and smaller developers. *Id.* If a developer circumvents the app review process, that has the potential to hurt *all other developers* who distribute apps via the App Store because users' confidence in iOS apps could be undermined by a poor experience with an app containing malware or that is otherwise unsuitable for distribution through the App Store. FOF ¶ 588.

Maintaining Quality and Improving Ease of Access

307. Maintaining or improving the quality of a product or service is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979); *Data Gen. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1183 (1st Cir. 1994). Likewise, improving the ease with which consumers can use a service is a legitimate business justification. *See In re Payment Card Interchange Fee & Merch. Discount Antitrust Litig.*, 986 F. Supp. 2d 207, 228 (E.D.N.Y. 2013), *rev'd on other grounds*, 827 F.3d 223 (2d Cir. 2016).
308. Apple has a legitimate interest in maintaining or improving the quality of its services. Here, Apple's conduct reflects a consistent prioritization of its consumers and the quality of service *they* receive from the App Store. FOF ¶ 581. The App Store provides a seamless, user-friendly experience in which the downloaded apps actually work on consumers' devices. FOF ¶ 582. And the App Store's curation of apps helps consumers find these quality apps in a one-stop shop. Because the App Store is the only place that distributes native iOS apps to iOS users, the confidence that users feel in downloading apps from the App Store proliferates to the entire iOS ecosystem. FOF ¶ 587. By excluding from the iOS ecosystem any apps that fail the app-review process, Apple serves an important certification role that gives users confidence that they can safely download apps onto their iPhones.

Broadening Consumer Choice and Increasing Output

309. Broadening consumer choice is a legitimate business justification. *See Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1157 (9th Cir. 2003). Increasing output also is a legitimate business justification. *See Law v. Nat'l Collegiate Athletic Ass'n*, 134 F.3d 1010, 1023 (10th Cir. 1998).
310. Apple's conduct is justified because it has broadened consumer choice and increased output. As discussed, *see supra* § III.B.i.c (¶ 292), the App Store's launch facilitated the

rapid proliferation of apps, including game apps. At its launch, the App Store's U.S. storefront provided 452 third-party apps by 312 distinct developers. FOF ¶ 219. In that first year alone of operation, consumers made 603 million downloads of third-party apps. FOF ¶ 224.1. As of 2020, there are approximately 1.8 million apps in the App Store, with billions of downloads of apps. FOF ¶ 467.3. Because of the App Store, consumers now have access to millions of third-party apps in a safe and secure environment.

Enhancing Interbrand Competition

311. Increasing interbrand competition is a legitimate business justification. *See Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 890 (2007) (“The promotion of interbrand competition is important because the primary purpose of the antitrust laws is to protect this type of competition.” (alteration and quotation marks omitted)); *see also Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1180 n.2 (9th Cir. 2016) (describing “the enhancement of Interbrand competition” as a “well-recognized economic benefit[.]” (quotation marks omitted)).
312. Apple’s “walled garden” is part of what allows it to differentiate itself from other operating systems like Android. Android devices, unlike Apple, typically allow sideloading and third-party app stores. FOF ¶ 74.1. A consumer choosing which device to purchase thus can choose between Apple, with its more *secure* operating system on the one hand, and Android, with its more *open* operating system on the other. Likewise, developers can choose between prioritizing apps for Apple and Android based on the same preferences. This differentiation thus increases competition between Apple and Android, because it gives consumers a meaningful point of comparison that allows them to purchase a device tailored to their preferences.

Protecting Intellectual Property and Preventing Free-Riding

313. Protecting a firm’s proprietary information and intellectual property and preventing free-riding are legitimate business justifications. *See Gorlick Distrib. Ctrs., LLC v. Car Sound Exhaust Sys., Inc.*, 723 F.3d 1019, 1026 (9th Cir. 2013); *Technical Res. Servs., Inc. v. Dornier Med. Sys., Inc.*, 134 F.3d 1458, 1467 (11th Cir. 1998); *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 461 (1992).
314. Similarly, a firm’s desire to exclude others, or profit from, its intellectual property is a presumptively legitimate and procompetitive business justification. *See Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1219 (9th Cir. 1997).
315. At bottom, Epic’s claims center on Apple’s refusal to license its intellectual property to Epic on terms that Epic would prefer. iOS, and the multitude of developer tools that Apple licenses through the terms Epic has challenged, are the subject of numerous patents and trademarks. [FOF]. As set forth above, Apple has no antitrust duty to share its intellectual property with Epic, and Apple also “certainly has no duty to deal under terms and conditions that [Epic] find[s] commercially advantageous.” *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 450 (2009). Antitrust claims premised on an intellectual property owner’s refusal to license threaten the very purposes of intellectual property *and*

antitrust law. “[S]uch claims will detract from the advantages lawfully granted to the holders of patents or copyrights by subjecting them to the cost and risk of lawsuits based upon the effect, on an arguably separate market, of their refusal to sell or license. The cost of such suits will reduce a patent holder’s incentive . . . to risk the often enormous costs in terms of time, research, and development. Such an effect on patent and copyright holders is contrary to the fundamental and complementary purposes of both the intellectual property and antitrust laws, which aim to encourag[e] innovation, industry and competition.” *See Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1218 (9th Cir. 1997)

316. The design of iOS protects Apple’s proprietary information and intellectual property, and prevents free-riding. Apple has invested billions of dollars in the development of iOS and the App Store. FOF ¶ 169. It also has made available a variety of tools to developers to help them design iOS-compatible apps for distribution through the App Store. Without the “walled garden” design of the App Store, developers could exploit Apple’s intellectual property and free-ride on its success and innovation by bypassing Apple altogether. In fact, conditions on the terms of an intellectual property license are an integral part of a procompetitive intellectual property licensing arrangement, because they allow valuable intellectual property rights to be shared among complementary businesses while still incentivizing innovation by other firms by foreclosing freeriding. FOF ¶ 598. Apple’s business desire to reap the benefits of the software and system that it built is inherently procompetitive.
317. Apple has proffered several valid, procompetitive justifications for its design of iOS and the App Store. The “technical and contractual restrictions” that Epic challenges actually improve the consumers’ overall experience on the App Store and protect their safety, security, and privacy.

e. Apple’s Procompetitive Justifications Are Not Pretextual

318. Because Apple has proffered procompetitive justifications for its conduct, Epic may prevail on a claim under Section 2 only if it demonstrates that *each* of Apple’s proffered procompetitive justifications is invalid or pretextual. *See Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.4 (9th Cir. 1990). It has not done so.
319. Epic bears the burden of proving that Apple’s “conduct [was not] redeemed by a legitimate business purpose.” *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.9 (9th Cir. 1990). The plaintiff “may rebut an asserted business justification by demonstrating either that the justification does not legitimately promote competition or that the justification is pretextual.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1212 (9th Cir. 1997). To prove pretext, the plaintiff must adduce evidence that directly undermines the veracity of the defendant’s proffered justification. *See Image Technical Servs. v. Eastman Kodak Co.*, 903 F.2d 612, 618–19 (9th Cir. 1990); *see also ACT, Inc. v. Sylvan Learning Sys., Inc.*, 296 F.3d 657, 668 (8th Cir. 2002) (evaluating whether the “declared business reasons for [the conduct] were pretext for [the defendant’s] *true* goal” (emphasis added)). Courts are hesitant to

“second-guess [a defendant’s] business judgment” because “[t]he question is not whether [the defendant] made the right or wrong decision; it is whether [the defendant] acted for an unlawful reason.” *Clark v. Mirage Casino-Hotel, Inc.*, 815 F. App’x 150, 152 (9th Cir. 2020) (discussing pretext in the labor discrimination context).

320. It is not sufficient to show that the challenged conduct was motivated only in *part* by anticompetitive intent—if the evidence “at most shows that a secondary motivation of the [challenged conduct] was to disadvantage the competition,” the existence of other procompetitive justifications for the conduct precludes a Section 2 claim. *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1259 (9th Cir. 1990).
321. Epic has not shown that *all* of Apple’s justifications are pretextual, as is its burden.
322. *First*, Epic has not shown that Apple’s justification of enhancing consumers’ safety, security, privacy, and reliability is pretextual. Epic’s expert admits that the requirement of exclusive distribution through the App Store provides security benefits to consumers. At that point, the inquiry ends—Apple has offered a legitimate business justification for its conduct, and Epic has admitted that such justification is not pretextual, because the conduct actually does advance the stated end. Indeed, even as Epic objects that third-party app stores *might* offer comparable security measures, there is substantial evidence that Apple’s design of the App Store has in fact benefitted customers by providing a safe platform through which to download native apps. FOF ¶ 594. If Epic’s demanded changes were implemented, there is no guarantee that third-party app stores would offer comparable security measures, and some customers may not know *ex ante* whether they are downloading an app through a third-party app store that provides the same quality of security as the App Store. Moreover, breaches in security owing to malware from other platforms could be erroneously attributed to Apple.
323. In any event, it is not Apple’s burden to prove that its security measures cannot be improved upon or protect against every conceivable threat to iPhone users. Even if some security threats remain, Apple protects its users better than anyone else does. It is able to do so because the App Store’s design gives it the power to curate apps in a way that enhances reliability, security, and privacy, and thus benefits consumers. *See, e.g., United Nat’l Maint., Inc. v. San Diego Convention Ctr. Corp., Inc.*, No. 07-CV-2172, 2008 WL 11333629, at *7 (S.D. Cal. Feb. 19, 2008) (finding no pretext where the defendant implemented a security policy that “present[ed] an efficient and feasible way to deal with security concerns related to this particular category of employees”). There is no evidence that this justification is mere pretext.
324. *Second*, Epic has not shown that Apple’s justification of maintaining or improving the quality of its services is pretextual. There is no evidence suggesting that Apple does not genuinely care about the quality of services it offers to its customers, nor is there any evidence that Apple does not genuinely believe that iOS offers consumers an enhanced experience. In fact, the evidence shows the contrary—that iOS and the App Store were designed with consumers in mind from the start, and with an eye toward providing a new and unique premium experience. FOF ¶ 581.

325. *Third*, Epic has not shown that Apple’s justification of broadening consumer choice is pretextual. *See Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1157 (9th Cir. 2003). Again, the most Epic can do is argue that Apple could broaden consumer choice in other ways, but that does not mean that Apple’s stated justification is pretextual. Even if Apple has misjudged the extent to which the design of the App Store broadens consumer choice, that would not give rise to a claim of pretext.
326. *Fourth*, Epic has not rebutted Apple’s legitimate business interest in protecting its proprietary information and intellectual property and preventing free-riding. There is no evidence that Apple is not genuinely interested in protecting its intellectual property, nor is there any evidence to doubt that Apple has a real commitment to preventing free-riding.
327. Epic’s attempted analogy to macOS—which does not have a similar “walled garden” design—is inapt. Section 2 does not require an alleged monopolist to “alter its way of doing business whenever some other approach might yield greater competition.” *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415–16 (2004). There are meaningful differences between macOS and iOS that Apple determined warranted a different approach between the two operating systems. FOF ¶ 72. The fact that Apple has chosen to protect its intellectual property on iOS in a different way from how it does so for macOS does not mean that Apple’s justifications are pretextual.

f. There Is No Least Restrictive Alternative Requirement

328. Epic cannot prevail by showing that there were less restrictive alternatives to the challenged conduct. “[T]here is no least restrictive alternative requirement in the context of a Section 2 claim.” *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 620 (9th Cir. 1990); *accord Apple iPod iTunes Antitrust Litig.*, No. 05-CV-0037-YGR, 2014 WL 12719194, at *1 (N.D. Cal. Nov. 25, 2014); *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. L.P.*, Nos. 05-CV-6419, et al., 2008 WL 7346921, at *16 (C.D. Cal. July 9, 2008), *aff’d*, 592 F.3d 991 (9th Cir. 2010). That is because the Sherman Act “does not give judges *carte blanche* to insist that a monopolist alter its way of doing business whenever some other approach might yield greater competition.” *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415–16 (2004); *see also Int’l Rys. of Cent. Am. v. United Brands Co.*, 532 F.2d 231, 239–40 (2d Cir 1976) (stating that proof of a company’s reasonable steps to preserve its business interests does not, without more, raise a genuine issue of material fact under § 2).
329. In any event, as discussed with regard to Epic’s Section 1 claims, *see infra* § III.C.ii.b (¶¶ 516–30), forcing Apple to change the way it enables the distribution of apps and monetizes the App Store to allow alternative marketplaces to distribute apps for iOS devices would not “be virtually as effective” or come “without significantly increased cost.” *In re Nat’l Collegiate Athletic Ass’n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1260 (9th Cir. 2020) (quotation marks omitted).
330. While Epic asks the Court to balance the procompetitive and anticompetitive effects of Apple’s conduct, that is also inappropriate for a Section 2 claim. Under the burden-shifting framework sometimes used for Section 2 cases, a plaintiff only may “show that the

proffered business justification is pretextual.” *Behrend v. Comcast Corp.*, 03-CV-6604, 2012 WL 1231794, at *19 (E.D. Pa. Apr. 12, 2012); *see also Morris Commc’ns Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1295 (11th Cir. 2004) (holding that once the defendant has met its burden to show its valid business justification, the plaintiff only may show that the proffered business justification is pretextual); *ACT, Inc. v. Sylvan Learning Sys., Inc.*, 296 F.3d 657, 670 (8th Cir. 2002) (holding that when a valid business reason exists for the conduct, that conduct cannot support the inference of a Section 2 violation). There is no balancing inquiry with respect to this claim.

ii. Sherman Act Section 2 – Monopoly Maintenance in the “iOS In-App Payment Processing Market” (Epic Count 4)

331. In Count 4, Epic claims that Apple has a monopoly in the “iOS In-App Payment Processing Market” that it has unlawfully maintained by requiring “iOS app developers that sell in-app content to exclusively use Apple’s In-App Purchase.” Dkt. 1 ¶¶ 219–20.
332. As explained with regards to Epic’s other Section 2 monopolization claim based on Apple’s distribution terms, *see supra* § III.B.i (¶ 218), “proving an antitrust violation under Section 2 of the Sherman Act is more exacting than proving a Section 1 violation,” “a court [that] finds that the conduct in question is *not* anticompetitive under § 1 . . . need not separately analyze the conduct under § 2.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991–92 (9th Cir. 2020). Because Counts 4 and 5 are both premised on Apple’s requirement that developers use Apple’s In-App Purchase for in-app purchases of in-app content, Dkt. 1 ¶ 227; *see also id.* ¶¶ 129–34 (Epic’s overlapping allegations concerning IAP), Count 4 fails for the same reasons that Count 5 fails. *See infra* § III.C.iii (¶¶ 531–41).

a. Apple Lacks Monopoly Power in the Relevant Market¹⁴

333. Like Epic’s Section 2 monopolization claim for the distribution of apps, Epic’s Section 2 claim regarding IAP fails because Apple does not have monopoly power or even market power in the relevant product market.
334. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant market is digital transactions between game app developers and consumers of game app content. Epic does not even try to argue that Apple has monopoly power in that market. Thus, because Apple’s definition of the market is correct, Epic’s claim fails at the outset for lack of monopoly power.
335. In the absence of evidence that Apple has a monopoly in the relevant market, Epic instead invites the Court to apply an “iOS In-App Payment Processing Market.” Dkt. 1 ¶ 109. But as discussed previously, *see supra* § II.B.iii (¶¶ 80–112), that is not a properly defined market. And even accepting that it is, Apple does not have monopoly power in a market that includes all reasonably interchangeable payment processing providers.

¹⁴ The requirement of monopoly power is addressed in § 7.1, pages 52–54 of the Joint Elements Submission.

336. If Epic’s conception of the market as consisting of “payment processors” is correct—although this conception fails because IAP is not even a payment processor—then Apple lacks monopoly power because it competes with companies like PayPal, Stripe, and Square, and occupies only a small fraction of the market. FOF ¶ 667. By way of example, in 2018, the App Store’s U.S. storefront processed less than 3% of the total dollars processed in the United States by online payment processing companies. FOF ¶ 669.
337. Even limiting the scope only to iOS, as detailed above, *see supra* § III.B.i.a (¶ 242), the App Store is not the only way to distribute apps to iOS consumers. Developers can instead offer web apps, accessible through the Safari web browser on an iOS device. FOF ¶ 233. Apple imposes no constraints on the type of payment solutions that may be used for web apps, and thus has no control over that portion of the market. Epic has not shown that, accounting for that portion of the market, Apple has a monopoly in the market for in-app payment processing; rather Epic ignores that segment of the proposed “market” altogether. It is Epic’s burden to prove monopoly power, yet it has failed to address the numerous other firms with which Apple competes.
338. Therefore, not only does Apple lack monopoly power in the properly defined market, it also lacks monopoly power in Epic’s proposed market. Epic’s claim fails.

b. Apple Has Not Engaged in Exclusionary Conduct with Respect to IAP¹⁵

339. Even accepting that Apple has monopoly power in a relevant market, Apple has not engaged in exclusionary conduct in anticompetitive maintenance of any such monopoly power, a necessary element of a monopolization claim. While Epic complains about Apple’s “contractual terms” that require developers, such as Epic, to use its IAP for certain transactions, that conduct is not unlawful.
340. Epic argues that its claims are based on a desire *not* to deal with Epic, but that again misapprehends the law and the nature of the claims. Epic is not forced to do business with Apple at all, and, more importantly, it is not forced to use IAP. Epic, like all other developers, is free to monetize (or not monetize its app) in many ways. For example, Epic could use in-game advertising, for which it pays no commission to Apple. FOF ¶ 249.11. It could sell the *Fortnite* app itself, which does not require the use of IAP, but rather a different set of APIs not challenged by Epic. FOF ¶ 55.
341. Thus, when Epic executes a digital transaction through the App Store, it is already doing business with Apple, and is doing business *voluntarily*. Epic is objecting in this lawsuit to the terms and conditions Apple has set for digital transactions that are executed using its intellectual property. In other words, Epic’s complaint is that it is being required to pay for the monetization option *it* selected for *Fortnite* and other apps. The question is thus whether Epic may dictate the terms on which it uses Apple’s services to execute digital transactions.

¹⁵ The requirement of exclusionary conduct is addressed in §§ 7.2–7.2.1, pages 55–58 of the Joint Elements Submission.

342. Apple is not required to deal with Epic on Epic’s preferred terms. *See supra* § III.B.i.b (¶¶ 263–83). “[T]here is no duty to deal under the terms and conditions preferred by a competitor’s rivals.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (alteration and quotation marks omitted). As with its distribution business model, Apple is entitled to charge for the services it provides to developers, including the licensing of its intellectual property, and to select the best way to collect those charges. *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 448 (2009) (“As a general rule, businesses are free to choose . . . [the] terms[] and conditions” of their dealings with their competitors.). Regardless of Epic’s preferences, there is nothing unlawful about Apple setting specific terms for the use of its intellectual property and creating an innovative mechanism to ensure that it does, in fact, receive its revenue share. As with Count 1, Apple has no duty to deal with Epic, and no duty to deal with Epic on the terms demanded, and thus has not engaged in unlawful exclusionary conduct.

c. Apple’s Conduct with Respect to IAP Does Not Have Anticompetitive Effects¹⁶

343. Even assuming that Apple’s conduct was unlawful, Epic’s claim still fails because there is no evidence that the effect of that conduct is anticompetitive, a necessary element of a Section 2 monopolization claim.
344. *First*, there is no reduced output. Instead, there are more digital game transactions than ever. Since the App Store’s launch, the number of digital game transactions has increased dramatically. FOF ¶ 575. There is thus no evidence that “output was restricted” as is required to show injury to competition. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2288 (2018) (quotation marks omitted).
345. *Second*, there is no evidence of increased prices. Far from being supracompetitive, the commission that Apple charges to developers for all its services—of which IAP is only one—is consistent with the value provided by Apple and its relevant comparators. IAP, for example, adds value by offering both a safe and convenient mechanism by which consumers are able to make purchases of digital content on the App Store via a single, secure payment mechanism that is seamlessly integrated into the app distribution platform. FOF ¶¶ 683–88. This benefits developers (especially small ones), who do not have to create payment solutions for their apps, and also consumers, who are able to purchase in-app digital content across all of their apps without reentering payment information each time. FOF ¶¶ 691–96.
346. Apple’s commission is in line with its competitors, including Google, Samsung, Sony, Nintendo and Microsoft. *See supra* § III.B.i.a (¶ 230). In fact, the emergence of these competitors—who all use commission rates at or above those paid by developers for digital game transactions on the App Store—demonstrates that IAP has encouraged competition by offering a feasible business model that others can replicate and offer in competition to the App Store.

¹⁶ Anticompetitive effects are addressed in § 7.2.2, pages 59–61 of the Joint Elements Submission.

347. The payment processing fees charged by others, such as PayPal, Stripe, Square, and Braintree, are inapt comparators. Apple’s commission is not a payment processing fee—Epic’s CEO confirmed in his testimony that commission rates for digital transactions do not represent mere payment processing fees. FOF ¶ 251.3. Rather, it reflects Apple’s commission for the use of its intellectual property (iOS and the App Store), the numerous resources it offers to developers (e.g., the SDK), and the other promotional benefits that Apple provides (access to a strong user base, advertising and marketing). FOF ¶¶ 651–52. The payment processors Epic identifies do not provide any of the same associated benefits that Apple provides to the developers. None of them, for instance, provide a platform for distributing apps to consumers around the world.
348. Not only is Apple’s commission comparable to other platforms’, it includes the fees Apple pays to its payment networks. As noted below, *see infra* § III.C.i.c (¶ 456), IAP is not really a payment processor, insofar as Apple relies on third-party service providers to actually process payments, FOF ¶ 651. Moreover, the commission would be collectible from developers even if they moved to a different payment solution. Therefore, even if developers were allowed to contract directly with third-party payment processors or to use an intermediary system like Square, any developer using a third-party payment processor would have to pay both those processor fees *and* Apple’s commission. Using third-party payment processors would be *more* expensive for developers because they would have to pay both fees.
349. *Finally*, rather than harming competition, like the introduction of iOS and the App Store, the introduction of IAP has improved the quality of the product ultimately provided to consumers. Because of IAP, developers have an opportunity to use different monetization strategies, such as the “freemium” and “paymium” models that allow users to access primary content in an app for free and purchase in-app “upgrades” or “premium” experiences. FOF ¶ 679. IAP’s seamlessness and bundled services give developers an opportunity to offer a pricing strategy that attracts both price-sensitive consumers that might want to use the app without any additional in-app content, while also earning more from other users of the app who are willing to spend to enable additional special features. FOF ¶¶ 683–690.
350. But while many developers choose to use IAP for these reasons, Apple does not require them to use it at all. Developers are free to monetize their apps in different ways, and Apple does not prevent developers, including Epic, from monetizing their applications in a manner that avoids any commission to Apple, encouraging innovative monetization strategies that allow developers to tailor their app to their consumers. FOF ¶ 93. For example, some developers sell physical services or products, and others decide not to sell digital goods via iOS apps. *Id.* In fact, 83% of apps on the App Store are entirely free. FOF ¶ 551.
- 350.1 There is no evidence that Apple’s “anti-steering” provisions—which prohibit developers from directing users within their apps to transact on a different platform or targeting iOS users using email addresses obtained during account registration to urge them to transact on a different platform—have had anticompetitive effects. Epic’s lead economist offered no separate analysis of the effect of Apple’s anti-

steering provisions. FOF ¶ 423.1. And in fact, such anti-steering provisions are common throughout the industry. *Id.*

350.2 These provisions are functionally no different from those upheld in *Ohio v. American Express Co.*, 138 S. Ct. 2274 (2018), in which the Supreme Court held that “there is nothing inherently anticompetitive about Amex’s antisteering provisions,” because “[t]hese agreements actually stem negative externalities in the credit-card market and promote interbrand competition.” *Id.* at 2289; *see also State Oil Co. v. Khan*, 522 U.S. 3, 15 (1997) (“[T]he primary purpose of the antitrust laws is to protect Interbrand competition.”). “When merchants steer cardholders away from Amex at the point of sale, it undermines the cardholder’s expectation of ‘welcome acceptance’—the promise of a frictionless transaction.” *Id.* The same is true here—Apple’s prohibitions apply principally “at the point of sale,” when a customer is using the app and intending to make a purchase. Directing the customer at that time to use a different transaction platform interferes with Apple’s promise of a frictionless transaction and undermines its overall value as a platform.

350.3 Developers are not forbidden from alerting customer of alternative transaction platforms. Just as a merchant may generally advertise that it accepts numerous forms of payments without preference, developers may generally advertise that consumers may transact on different platforms. FOF 423.2. What developers may not do is use Apple’s platform—or the information they gather through the account registration thereon—to undermine the transaction services that Apple provides.

350.4 Moreover, Epic introduced no evidence at trial that *it* has been harmed by Apple’s anti-steering provisions. When this was pointed out during closing arguments, Epic’s counsel pointed only to interrogatory responses that are not in evidence, *see* Trial Tr. 4145:12–17, thus conceding there is no trial evidence on this point. Accordingly, Epic does not even have standing to challenge the anti-steering provisions in this case.

351. In short, given the value provided by IAP and the innovation it has spurred across the market, there is no evidence that the contractual terms that Epic challenges have had an anticompetitive effect.

d. Any Allegedly Anticompetitive Conduct Is “Redeemed” by a Multitude of Procompetitive Business Justifications¹⁷

352. To the extent the terms of the DPLA with respect to IAP have any anticompetitive effects, Apple has proffered a number of procompetitive justifications for its conduct here. *See Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258 (9th Cir. 1990) (An “antitrust defendant’s conduct is redeemed by a legitimate business purpose.”).

¹⁷ Business justifications are addressed in §§ 7.2.3–7.2.5, pages 62–66 of the Joint Elements Submission.

Collection of Commission

353. The collection of a commission for delivery of a product is a legitimate business justification. *See Morris Commc'ns Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1296 (11th Cir. 2004) (“Section 2 of the Sherman Act does not require [the defendant] to give its product freely to its competitors.”).
354. Apple’s IAP is integral to its ability to collect its commission. Apple has invested billions of dollars building, developing, and improving the App Store. FOF ¶ 169. Epic does not dispute (nor could it dispute) that Apple is entitled to collect a commission from those firms—like Epic—that seek to license Apple’s intellectual property. A license is necessary because each time a digital transaction is effected through the App Store, it reflects the use of Apple’s intellectual property in the development of the digital content that has been purchased, the operation of the digital content on Apple’s iOS technology, and the technology that is being used to facilitate the digital transaction. FOF ¶ 89.
355. Apple’s commission is the primary method through which Apple monetizes the App Store, including the proprietary tools and resources made available to developers. IAP allows Apple’s commission to be automatically deducted from transactions, obviating the need for (and expense of) separately tracking, auditing, and collecting commissions on in-app purchases of digital content. FOF ¶¶ 681–82. It prevents free riding on Apple’s intellectual property by developers, such as Epic, who otherwise might be able to bypass Apple’s commission by distributing outside the iOS native-app distribution and payment processing system. *See Coast to Coast Entm’t, LLC v. Coastal Amusements, Inc.*, No. 05-CV-3977, 2005 WL 7979273, at *22 (D.N.J. 2005) (reasoning that the defendant’s “motive was to protect the return on its investment . . . and to prevent any free riders from taking advantage of its contributions, which in effect enhances competition”). Based on Apple’s business judgment, it has decided that the best way to collect compensation from developers, including for their access to Apple’s considerable consumer base, is through the use of IAP.
356. More specifically, Apple has determined that the use of IAP is the most *efficient* way to ensure that it is able to collect its commission. If developers who earn money from in-app purchases—and owe a contractually agreed upon commission to Apple for those purchases (which Epic does not dispute Apple is entitled to)—were able to circumvent IAP, Apple would have limited ability, from a technical perspective, to collect any commissions on those sales. FOF ¶ 681. Instead, Apple would largely have to rely on developers themselves to accurately report the revenue earned and remit the commission back to Apple. Apple would have little to no ability to confirm that developers were remitting the full, contractual amount, or that they were timely doing so, imposing additional costs on Apple and directly injuring its ability to collect a commission for the licensing of its intellectual property. FOF ¶ 682.
357. Epic’s “Project Liberty” demonstrates the practical problems with dispensing with IAP. Epic has never argued that a 30% commission on digital in-app transactions is anticompetitive, only that the compelled use of *IAP* is anticompetitive. *See* Dkt. 1 ¶¶ 216–32. Yet through its circumvention of IAP, Epic has *never* paid to Apple its 30%

commission for the digital in-app transactions executed through its alternative payment mechanism on the iOS version of *Fortnite*. Instead of having the ability to take its commission directly from the transaction as it is being executed (as IAP allows it to do), Apple has been forced to bring claims for breach of contract and invest substantial resources in pursuing this litigation. The required use of IAP helps to avoid situations exactly like the one Apple currently is in.

358. Protection of its intellectual property through rational means of collecting commission is a valid business justification for Apple's conduct. *See Consultants & Designers, Inc. v. Butler Serv. Grp., Inc.*, 720 F.2d 1553, 1559 (11th Cir. 1983) (concluding that the defendant had "a legitimate interest in protecting from opportunistic appropriation its investment").
359. It is legally irrelevant whether Apple initially thought the App Store would generate a profit. Epic has not challenged the *price* that Apple charges to facilitate digital transactions, and so any complaint about the profit margins of the App Store as compared to 13 years ago is untethered to the claims asserted here. Moreover, if it is actually the case that Apple incorrectly predicted the profit margins for the App Store (an assertion not borne out by the evidence as Apple does not calculate profit margins for the App Store), the 30% commission rate has remained constant at all times, except insofar as Apple has *reduced* the effective commission rate by offering special reduced rates for many developers. FOF ¶¶ 569–71. The justifications for setting a 30% commission rate are at least as legitimate today as they were thirteen years ago.
360. It also is irrelevant that Apple does not collect a commission on the sale of physical goods and services and thus does not require the use of IAP for these transactions. This policy is not news to Epic (or any other developer), as it has been in place since the inception of IAP. FOF ¶ 159. For digital transactions, Apple is delivering digital content directly to the user. FOF ¶ 55. But Apple does not play the same role for an order of physical goods or services—Apple has no control over or insight into whether an order from Amazon is timely delivered, a driver requested through Uber arrives on time, or a consumer product is in the condition promised. Apple made the judgment that collecting a commission only for digital transactions would be most consistent with the services it provides. It was entitled to make that judgment without second-guessing by Epic or the courts. *See Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

Consumer Safety and Security

361. Enhancing consumer safety and security is a legitimate business justification. *See Cont'l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 55 n.23 (1977).
362. Apple's IAP provides a safe way for consumers to purchase digital content. IAP is a safe and secure method for purchasing digital content. FOF ¶¶ 684–85. Specifically, IAP has the potential to be more secure than other services, such as PayPal, because it utilizes built-in service versus accessing third-party libraries that may or may not have malware. FOF ¶ 685. As for hardware, Apple uses a biometric scanner as part of its Touch ID to authenticate transactions, and similarly offers users its revolutionary Face ID technology

to make purchases. FOF ¶¶ 175, 179. IAP protects the privacy and security of iOS users by withholding their private information from developers or other third parties. FOF ¶ 685. Because developers must use IAP for digital transactions, Apple and its users can be confident that digital transactions will be completed in a safe and secure manner, and that users' payment methods and instruments will be protected. Allowing new payment solutions for digital transactions would introduce new security risks for digital transactions, and Apple has reasonably elected to mitigate against those risks by requiring the use of IAP.

Providing Better Service to Consumers

363. Providing enhanced services to consumers is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979).
364. IAP allows Apple to provide better service to consumers by providing a single point of sale, rather than requiring that consumers manage different payment options for every app they use. FOF ¶ 687. Through a streamlined process, IAP identifies customers and devices; conducts fraud-related checks; conducts credit-worthiness checks; stores and stacks payment instruments; delivers content; and conducts asynchronous dealing. FOF ¶ 693. In addition, through IAP, users can customize their settings for use across all apps. FOF ¶ 688. Because Apple manages those settings, when consumers obtain a new device, they can keep them without having to customize them a second time on a different device, adding further value to consumers. *Id.* Furthermore, IAP enables Apple to monitor transactions and ensure that developers deliver the digital goods and services that consumers have paid for. FOF ¶ 686. Consumers can thus make purchases through the App Store with confidence that they will actually receive what they purchase.

Improving Product Quality for Developers

365. Improving product quality for the benefit of buyers is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979) (concluding that the defendant, "assuming it was a monopolist, had the right to redesign its products to make them more attractive to buyers . . . by . . . improved performance").
366. Along with helping Apple provide a better service for consumers, IAP improves the quality of Apple's service for developers, too. IAP aids with currency conversion and compliance with tax laws. FOF ¶ 692. IAP also conducts fraud-related and credit-worthiness checks. FOF ¶ 693. By doing so, Apple verifies customers for developers and ensures that developers actually get paid for the products and services they provide to consumers.
367. Having a secure payment solution—including measures that detect fraud, restore consumers' purchases on their new devices, ensure that developers do not mishandle funds, protects against accidental purchase, safeguard the privacy of users, and monitor the delivery of digital transactions—makes the App Store more appealing to users, which in turn enhances the value of the platform to developers. In addition, the centralized payment system enables Apple to aggregate payments, which is especially valuable to smaller

developers or those pursuing small transactions. FOF ¶ 693. Developers benefit also because new users of their app will instantly have a seamless and familiar way to make in-app transactions and will not be deterred by the frustration of having to add new payment information for each app they use. FOF ¶ 691. In this way, making IAP the *exclusive* payment processing function for iOS apps is valuable because each additional app that uses IAP increases the value of IAP to all other developers and consumers. If, on the other hand, some developers use a less effective third-party payment solution, consumers' dissatisfaction with those alternatives is likely to make the App Store less attractive to consumers as a whole (who may have little or no visibility into the payment solutions used by each developer) and thus less profitable for developers.

e. Apple's Procompetitive Justifications Are Not Pretextual

368. Because Apple has proffered these valid, business justifications for its conduct, Epic may prevail on a claim under Section 2 only if it demonstrates that each of Apple's proffered procompetitive justifications is invalid or pretextual. *See Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.4 (9th Cir. 1990). It has not done so.
369. *First*, although Epic thinks that Apple could prevent free riders without requiring the use of IAP for digital transactions, Apple is entitled to make its own business decision about the best way to do so, efficiently and effectively. Courts are ill-suited “to act as central planners, identifying the proper . . . terms of dealing.” *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004), and Epic's invitation to second guess Apple's own business judgment should be rejected.
370. *Second*, with respect to the security features of IAP, Epic cannot deny that Apple has legitimately endeavored to provide a safe and secure mechanism for transactions between developers and consumers. All antitrust law requires is that Apple has legitimate, non-pretextual reasons for its conduct, and Apple has shown that it does. “[F]irms must have broad discretion to make decisions based on their judgments of what is best for them and . . . business judgments should not be second-guessed even where the evidence concerning the rationality of the challenged activities might be subject to reasonable dispute.” *In re Citric Acid Litig.*, 191 F.3d 1090, 1101 (9th Cir. 1999).
371. *Third*, Epic cannot prove that Apple's interest in providing a better service to consumers through exclusive use of IAP is pretext. As noted above, requiring the use of IAP for digital transactions enables Apple to exercise quality over such transactions. FOF ¶ 55. Apple's business reasoning is internally consistent, and there is no evidence that Apple's desire to enhance the value of the App Store by providing better service to its consumers is pretextual.
372. *Fourth*, Epic cannot deny that Apple has a genuine interest in providing quality services to its developers. And based on Apple's business judgment, it has determined that requiring the use of IAP for digital transactions adds value, enhances the value of the platform, and thereby increases its value to developers. Once again, even if Epic could prove that Apple is “mistaken” about whether exclusive use of IAP in fact enhances value for developers,

that is not enough to show pretext. *Day v. Sears Holdings Corp.*, 930 F. Supp. 2d 1146, 1171 (C.D. Cal. 2013).

373. As discussed with regard to Epic’s Section 2 claim regarding app distribution, a plaintiff may not prevail in a Section 2 claim by showing that there were less restrictive alternatives to the challenged conduct or by inviting the Court to balance competitive and anticompetitive effects. *See supra* § III.B.i.f (¶¶ 328–30).

iii. Sherman Act Section 2 – Essential Facility (Epic Count 2)¹⁸

374. Epic also claims that Apple has violated the Sherman Act “through its unlawful denial to Epic and other app distributors of an essential facility—access to iOS,” Dkt. 1 ¶ 197. This claim fails as a threshold matter, because there is no essential facility doctrine under Section 2.¹⁹
375. The Sherman Act generally “does not restrict the long recognized right of a trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.” *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919). There is consequently no general duty to cooperate with rivals. *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016); *see also Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.) (holding that “a strong presumption of legality” attaches to unilateral action because “[e]xperience teaches that independent firms competing against one another is almost always good for the consumer”). Only in exceptional circumstances—which, for the reasons noted above, are not present here, *see supra* § III.B.i.b (¶¶ 263–83)—will a firm be compelled to do business with its competitor, such as where there is a “unilateral termination of a voluntary and profitable course of dealing,” *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1132 (9th Cir. 2004).
376. Epic invokes an even narrower exception to the general rule that there is no general duty to cooperate with rivals: an essential facility claim, which is “a variation on a refusal to deal claim.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016).
377. The Supreme Court has “never recognized” an essential facility doctrine under Section 2. *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 411 (2004); *accord Metronet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1129 (9th Cir. 2004). Rather, the Court has recognized that “[f]irms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers.” *Trinko*, 540 U.S. at 407. Accordingly, compelling such firms to share the source of their advantage is in

¹⁸ The elements of an essential facility claim are addressed in § 8, pages 68–69 of the Joint Elements Submission.

¹⁹ Apple acknowledges that the Ninth Circuit has recognized an essential facility claim in limited circumstances, but respectfully preserves herein its contention that there is no such claim under Section 2 of the Sherman Act.

tension with the underlying purpose of antitrust law, *id.* at 407–08, and, absent a duty to cooperate, any claim premised on a rival’s refusal to deal with or assist the plaintiff fails, *see Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 451 (2009). Courts therefore are hesitant “to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited.” *Trinko*, 540 U.S. at 408.

378. In the lower courts, the essential facility analysis finds its “roots” in cases involving concerted refusals to deal by multiple firms that took control of physical bottlenecks because, in “that setting, . . . [t]he defendants had not built or created anything except a combination to take over existing facilities” and “mandating the [defendants] admit their competitors merely permitted joint ownership of common facilities.” *SCFC ILC, Inc. v. Visa USA, Inc.*, 36 F.3d 958, 971 (10th Cir. 1994).
379. Whatever merit such a theory has in the context of concerted action, such analysis “cannot automatically govern *unilateral* denial of an essential facility” because “concerted action is exceptional, whereas unilateral action is omnipresent,” and courts must “be very wary about examining the decisions of each of those firms in our economy.” *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 544 (9th Cir. 1991) (quoting Philip E. Areeda, *Essential Facilities: An Epithet In Need of Limiting Principles*, 58 Antitrust L. J. 841, 844–45 (1990)).
380. In the context of unilateral action, the essential facility doctrine has no legal basis. A plaintiff pursuing such a claim is essentially seeking to appropriate its competitor’s property for itself, compelling the competitor to give up the lawful advantage the competitor achieved through innovation and investment so that the plaintiff may benefit from that innovation at the expense of the competitor. *See MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1129 (9th Cir. 2004). The essential facility doctrine is thus decidedly *anticompetitive* when applied to unilateral conduct, and thus is “inconsistent with antitrust’s purpose.” 7D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 771b (4th ed. 2020 supp.).
381. Indeed, such a claim threatens to discourage firms from investing in innovative product designs in the first place. If a firm’s property can be appropriated by competitors any time it becomes *too* valuable, then firms would have little incentive to invest resources in the development of cutting-edge products, to the detriment of consumers. As then-Judge Gorsuch has explained, “Forcing firms to help one another . . . risks reducing the incentive both sides have to innovate, invest, and expand[,] . . . results inconsistent with the goals of antitrust.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.).
382. In light of the Supreme Court’s refusal, thus far, to recognize such a claim, and its inconsistency with the purposes and design of antitrust law, an essential facility claim is untethered to the law and cannot serve as the basis for liability under Section 2.
383. In fact, Epic appears to have (rightfully) abandoned this theory of liability. None of Epic’s experts mention the theory at all, much less provide analytical or economic support for the theory. And Epic’s own lead economist states that the allegations here should be

characterized as tying or as a *conditional* refusal to deal, apparently disclaiming essential facility as a viable theory of liability. Thus, along with having no basis in the law, Epic’s essential facility claim has no support in the record. This claim may be dismissed on the pleadings.²⁰

384. In any event, Epic has not proved and cannot prove an essential facility claim. To establish a violation of the essential facility doctrine, Epic must show (1) that Apple is “a monopolist in control of an essential facility”; (2) that Epic “is unable reasonably or practically to duplicate the facility”; (3) that Apple “has refused to provide [Epic] access to the facility”; and (4) that “it is feasible for [the defendant] to provide such access.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016). Epic has not satisfied any of these elements.

a. iOS Is Not an Essential Facility Under Any Market Definition²¹

385. The first and second elements of an essential facility claim—whether the defendant is in control of an essential facility and whether the defendant may reasonably or practically duplicate the facility—often collapse into a single inquiry of whether the facility in question is an essential facility. “[T]he second element is effectively part of the definition of what is an essential facility in the first place. That is to say, if the facility can be reasonably or practically duplicated it is highly unlikely, even impossible, that it will be found to be essential at all.” *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992). Accordingly, it is appropriate to assess the first two elements of an essential facility claim in tandem.
386. Essential facilities typically are limited to physical infrastructures of a finite availability (such as a bridge or a power network) that are not capable of being replicated by competitors and serve as a conduit for the distribution of another product. For example, sports stadiums facilitate the display of indoor sports, *see Fishman v. Estate of Wirtz*, 807 F.2d 520, 532 (7th Cir. 1986), and railroad bridges permit continuation of rail service and delivery of freight, *see United States v. Terminal R.R. Ass’n*, 224 U.S. 383, 392–94 (1912).
387. “Essential means essential,” not “‘best,’ ‘most profitable’ or ‘preferable.’” *JamSports & Entm’t, LLC v. Paradama Prods., Inc.*, 336 F. Supp. 2d 824, 839 (N.D. Ill. 2004). Only preexisting “bottlenecks” (such as bridges and infrastructure networks) typically have been deemed essential facilities by the courts. *See MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1148 (7th Cir. 1983).
388. Even if it is not economically feasible for the plaintiff to duplicate the alleged essential facility, that facility is not essential if alternatives are available to the plaintiff. *See Blix Inc. v. Apple, Inc.*, No. 19-CV-1869-LPS, 2020 WL 7027494, at *7 (D. Del. Nov. 30,

²⁰ The Court directed the parties not to file motions in limine before trial. Hr’g Tr. 18:2 (Mar. 1, 2021).

²¹ The meaning of an essential facility is addressed in §§ 8.2–8.4, pages 73–77 of the Joint Elements Submission.

2020). The alternative need not be of equivalent quality or efficiency, for “even if [a plaintiff] was denied access to the most desirable facilities, that is not enough to make out an essential facilities claim” so “long as there is an alternative (albeit inferior)” facility that the plaintiff could access (or create). *JamSports & Entm’t, LLC v. Paradama Prods., Inc.*, 336 F. Supp. 2d 824, 839 (N.D. Ill. 2004).

389. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant product market here is digital transactions for game apps, and Apple does not have a monopoly (or even market power) in that product market, *see supra* § III.B.i.a (¶¶ 229–36). For this reason alone, Epic’s essential facility claim fails.
390. Moreover, iOS cannot be an “essential” facility in this market because there are numerous platforms through which competitors facilitate digital transactions (and Epic in fact owns one of them, EGS). Indeed, Epic’s own allegations establish that iOS is not an essential facility because Epic has been (and continues to be) successful in distributing its software programs, including *Fortnite*, to consumers through alternative platforms. FOF ¶¶ 355–355.4; *see also Blix Inc. v. Apple, Inc.*, No. 19-CV-1869, 2020 WL 7027494, at *7 (D. Del. Nov. 30, 2020) (“Blix has not stated a claim for liability under the essential facilities doctrine because Blix’s allegations, taken as true, demonstrate that the MacOS App Store is not an essential facility. Blix alleged that BlueMail (1) ‘achieved success on *multiple* platforms,’ i.e., not just on Apple’s platforms and (2) was sold in the market for five years before it became available in MacOS App Store.” (emphasis in original)). And as discussed in more detail above, *see supra* § II.B.ii.a (¶¶ 46–53), developers have many ways to distribute their game apps, including through Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, and, of course, EGS. FOF ¶ 494.1.
391. Epic, however, insists that the product market is the distribution of iOS apps. Even if the Court were to accept that proposed market, a proprietary operating system encompassing features and functionalities protected by patent, copyright, and other intellectual property laws and doctrines cannot be an essential facility. The refusal to license intellectual property, including software and/or operating systems cannot give rise to liability under an essential facility theory. *See, e.g., SolidFX, LLC v. Jeppesen Sanderson, Inc.*, 935 F. Supp. 2d 1069, 1082–83 (D. Colo. 2013) (rejecting argument that integration software was essential facility because doing so would “subvert . . . the rights granted a copyright holder” and the “assertion of one’s copyright interests is [a] per se legitimate” business justification for a refusal to deal). For example, because “[t]he Copyright Act expressly grants to a copyright owner the exclusive right to distribute the protected work, . . . ‘[t]he owner of the copyright, if [it] pleases, may refrain from vending or licensing and content [itself] with simply exercising the right to exclude others from using [its] property.’” *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1186 (1st Cir. 1994) (quoting *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932)).
392. Indeed, the “imposition of a duty to license might serve to chill the very kind of innovative process” that intellectual property laws incentivize and Apple undertook to develop iOS. *In re E. I. DuPont de Nemours & Co.*, 96 F.T.C. 653, *67 (1980). A firm’s proprietary intellectual property cannot be an essential facility, because “an intellectual property owner

has the right unilaterally to decide not to use or license its intellectual property.” Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 13.03 [C][2] (3rd ed. 2020 supp.). And there is “no case in which a United States court consciously held that an intellectual property right was itself an essential facility that must be licensed on reasonable and nondiscriminatory terms.” *Id.*; see also *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 761 F. Supp. 185, 192 (D. Mass. 1991) (“[A] better mousetrap is not necessarily an essential facility.”).

393. iOS is not an essential facility. Rather, it is a proprietary operating system that is the result of substantial investment—of both time and money—by Apple. It consists of many design choices and features that are protected by patents, trademarks, and copyrights. FOF ¶¶ 89–89.4. Apple has no obligation—under the antitrust laws or otherwise—to redesign its proprietary systems to accommodate Epic, nor does it have an obligation to license its intellectual property out to would-be competitors on terms favorable to those firms. Just the opposite—an alleged monopolist “is much more likely to be held liable for failing to leave its rivals alone than for failing to come to their aid.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1072 (10th Cir. 2013) (Gorsuch, J.).
394. A proprietary operating system cannot constitute an essential facility. Producers of technological devices—such as computers, phones, automobiles, appliances, etc.—have the choice when designing their products to adopt (or adapt) an existing open-source operating system (such as Linux or Android), licensing a proprietary operating system (such as Microsoft), or developing their own operating system (as Apple did with iOS). A firm that elects to design its own operating system cannot be compelled to provide public access to that operating system once it proves workable and desirable for other competitors. See Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 13.03 [C][2] (3rd ed. 2020 supp.). It is the firm’s prerogative to decide whether and to what extent to make its operating system available to others, and a firm’s decision to restrict access (or to set terms of access) is not a basis for antitrust liability.
395. If Epic’s proposed application of the essential facility theory were correct, a firm “might be deterred from investing, innovating, expanding (or even entering a market in the first place) with the knowledge anything it creates it could be forced to share.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.). In such circumstances, a firm would have little incentive to engage in the expensive and laborious process of innovating new products if any innovation would have to be shared with others at terms dictated by competitors, and in fact it may be economically irrational for firms to make such investments if courts could impose “forced sharing.” *Id.* Accordingly, “a court’s role is not to force access to proprietary information,” because “that would reduce incentive to innovate and ultimately harm consumers.” *Morris Commc’ns Corp. v. PGA Tour, Inc.*, 235 F. Supp. 2d 1269, 1285 (M.D. Fla. 2002). Epic cannot “just demand the right to piggyback on its larger rival” in court, rather than “investing [or] innovating” itself. *Novell*, 731 F.3d at 1073.
396. Because iOS does not constitute an essential facility under any market definition, Epic’s claim fails at the first element.

b. Epic Has “Access” to iOS²²

397. Even if iOS could constitute an essential facility, Epic’s claim still fails because Epic *does* have access to iOS through the terms of the DPLA. “[W]here access exists, the [essential facility] doctrine serves no purpose.” *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 411 (2004). A plaintiff must prove it was “frozen out of” access to the facility. *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016). To do so, it must identify what kind of access it sought, prove that it made a request for such access, and prove that the defendant refused to grant it such access. *See City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1367 (9th Cir. 1992).
398. To start, Epic does not allege what constitutes “access to iOS,” what actions by Apple allegedly constitute a denial of such access, or why any such actions are not reasonable. *See* Dkt. 1 ¶ 197. That alone dooms Epic’s essential facility claim.
399. Even more damning, Epic’s own experts admit that Epic has access to iOS, stating that Apple allows developers to create apps for iPhones by giving them *access to the iOS operating system*. Having identified the alleged essential facility as iOS, and then affirmatively offering evidence that Epic (and other developers) *have* access to iOS, Epic has no basis on which to maintain its essential facility claim.
400. Epic has not made a cognizable demand for “iOS” access that Apple has refused. *See City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1367 (9th Cir. 1992) (“But, even had Vernon offered some evidence which raised a material issue of fact with respect to Edison’s reasons for refusing relative size share access, we can find no authority—and Vernon has pointed to none—which supports Vernon’s theory that ‘reasonable’ access to Edison’s facilities must take the form of relative size share access.”). On the contrary, Epic requested and received access to iOS on the same terms as all other developers, i.e., through the DPLA.
401. Nor did Apple deny access to an essential facility by merely refusing to deal in a manner “conducive to [Epic’s] existing business model,” *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1130 (9th Cir. 2004), “in the most profitable manner” to Epic, *id.*, or on Epic’s preferred terms, *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016) (plaintiff had access to facility even where process for doing so was “Kafkaesque” and inferior to “certain [other] customers”); *Ferguson v. Greater Pocatello Chamber of Commerce, Inc.*, 848 F.2d 976, 983 (9th Cir. 1988) (rejecting claim because plaintiff did not outbid its competitors for access to facility).
402. Epic clearly did (prior to Project Liberty) distribute its apps through iOS and the App Store. So do millions of other developers. “[T]he access factor cannot be read to mean that the courts will secure a better deal for an antitrust plaintiff.” *City of Coll. Station, Tex. v. City of Bryan, Tex.*, 932 F. Supp. 877, 888 (S.D. Tex. 1996). As Epic knows, the DPLA sets forth the specific terms of Epic’s access to iOS and its use of Apple’s intellectual property.

²² Access to an essential facility is addressed in § 8.5, pages 78–79 of the Joint Elements Submission.

What Epic really means is that it does not like the terms of the access it *does* have. Even so, Epic does not claim that these terms prevent it from being profitable. Just the opposite: Epic has made over \$700 million dollars through its distribution of *Fortnite* through iOS.

403. The fact that Epic *might* make more money if Apple implemented Epic’s demanded changes is irrelevant. The essential facility doctrine does not require that Apple change its business model based on Epic’s demand. For example, in *City of Vernon v. Southern California Edison Co.*, a California city sued a public utility based on the utility’s alleged refusal to provide a specific type of access to its transmission lines. 955 F.2d 1361, 1363 (9th Cir. 1992). The Ninth Circuit rejected the city’s essential facility claim, explaining that it was not “a case where [the utility] simply refused to supply [the city] with its power needs,” and that the city’s “demand that [the utility] turn over its facility to a city simply because the city could save money by obtaining cheaper power stands the essential facility doctrine on its head.” *Id.* at 1367.
404. The same reasoning applies here—this is not a case in which Apple has refused to allow Epic access to iOS; rather, Epic is looking for better *terms* of access. There is no support for the notion that the essential facility doctrine can be used to bludgeon a competitor into granting the plaintiff unrestricted access to its intellectual property on terms of the plaintiff’s choosing, and Epic’s insistence otherwise fails.

c. Epic Has Not Shown That It Is Feasible for Apple to Alter the App Store’s Design in the Way Epic Demands²³

405. Epic has not shown that it is feasible for Apple to give Epic the “access” it desires.
406. For denial of access to give rise to liability, it must be technically and practicably feasible for the monopolist to give competitors access to its essential facility. *See MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1133 (7th Cir. 1983); *see also Hecht v. Pro-Football, Inc.*, 570 F.2d 982, 992–93 (D.C. Cir. 1977). “[This] element basically raises the familiar question of whether there is a legitimate business justification for the refusal to provide the facility.” *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992).
407. “Although the defendant generally has the burden of coming forward with a legitimate business justification after the plaintiff has shown evidence of monopolistic intent, the plaintiff . . . ultimately has the burden of proving that the defendant acted without a legitimate business justification.” *City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1366–68 (9th Cir. 1992).
408. As discussed above, *see supra* § III.B.i.d (¶¶ 299–317), Apple has offered many procompetitive business justifications for the design of the App Store and the terms of the DPLA, including maintaining the quality of the service it provides and providing consumer security and privacy. An essential facility claim fails unless the plaintiff proves that *all* of the defendant’s business justifications were invalid and/or pretextual. *See, e.g., City of*

²³ Feasibility of access is addressed in § 8.6, pages 80–81 of the Joint Elements Submission.

Anaheim v. S. Cal. Edison Co., 955 F.2d 1373, 1381 (9th Cir. 1992) (affirming judgment in favor of defendant because plaintiff failed to disprove business justifications). And Epic has not shown that these justifications are pretextual. Even though it posits that Apple’s app review process and other features of the App Store *could* be more robust, that is not the standard for rebutting a legitimate business justification. Apple has adduced substantial evidence that its design of iOS and the App Store was motivated at least in part by procompetitive business justifications, and that is all that is required. *See supra* § III.B.i.e (¶¶ 318–27).

409. Nor can Epic satisfy its burden of showing that providing the “access” to iOS it demands would be economically feasible. *See City of Malden, Mo. v. Union Elec. Co.*, 887 F.2d 157, 160 (8th Cir. 1989) (use must be “economically and technically feasible”); *MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1133 (7th Cir. 1983) (similar); *Morris Commc’ns Corp. v. PGA Tour, Inc.*, 117 F. Supp. 2d 1322, 1327 (M.D. Fla. 2000) (similar).
410. There is no evidence that it would be economically feasible for Apple to change the design of iOS and the App Store. The feasibility requirement is “analyzed not in terms of all the possibilities” but rather “in the context of [the defendant’s] normal course of business.” *Laurel Sand & Gravel, Inc. v. CSX Transp., Inc.*, 924 F.2d 539, 545 (4th Cir. 1991). Epic, therefore, must show in Apple’s “normal course of business,” it would be feasible for Apple to allow Epic to have the type of access it seeks.
411. In order to show that it would be feasible to provide access in its “normal course of business,” a plaintiff can show that the defendant already provides that access to other actors. *Laurel Sand & Gravel, Inc. v. CSX Transp., Inc.*, 924 F.2d 539, 545 (4th Cir. 1991). For example, in *Laurel Sand & Gravel*, the Fourth Circuit concluded that the plaintiff, a subsidiary railroad which was seeking access to railroad track, failed on the feasibility element because “[t]here is no evidence that [the defendant] rents track to subsidiary railroads.” *Id.* Because there was no evidence that the defendant was granting access to other subsidiary railroads (and refusing to grant access only to the plaintiff in particular), there was no basis for the court to infer that providing the type of access demanded was feasible for the defendant. *Id.* The court thus analyzed feasibility “not in terms of all the possibilities of [the defendant] as a railroad, but in the context of its normal course of business.” *Id.*
412. So too here. While Epic seeks a special deal, there is no evidence that Apple provides, or has ever provided, this type of “access” to other developers. Instead, all developers have access to iOS through the terms of the DPLA, which are equally applicable to Epic. The terms of the DPLA are Apple’s “normal course of business,” and they do not allow Epic the special type of access it demands here.
413. Therefore, it would be not be feasible for Apple to change the design of iOS and the App Store.

d. Epic Lacks Standing to Bring an Essential Facility Claim Based on Its Alleged Market Definition²⁴

414. Finally, even if Epic could otherwise satisfy the elements of an essential facility claim, its claim fails for an alternative reason: Epic does not compete with Apple in any market that comprises or is “controlled” by operating systems, including iOS, and thus lacks standing.
415. Only *competitors* of the defendant may assert essential facility claims. *Ferguson v. Greater Pocatello Chamber of Commerce, Inc.*, 848 F.2d 976, 983 (9th Cir. 1988). Specifically, Epic must prove that it is a competitor of Apple “in the field of the facility itself or in a vertically related market that is controlled by the facility.” *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1357 (Fed. Cir. 1999).
416. In its capacity as a “consumer” of iOS (i.e., a developer), Epic has no standing to bring an essential facility claim.
417. Nor can Epic proceed as a “competitor” of Apple’s, because Epic does not compete with Apple to provide access to iOS, nor does Epic allege otherwise.
418. Courts have regularly rejected essential facility claims brought by plaintiffs who were potential users that were not allowed to license patented or copyrighted technology. *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1356–57 (Fed. Cir. 1999); *see also Interface Grp., Inc. v. Mass. Port Auth.*, 816 F.2d 9, 12 (1st Cir. 1987) (agency operating airport did not compete with charter airline that was denied access to a terminal and maintenance of its choice); *Garshman v. Universal Res. Holding, Inc.*, 824 F.2d 223 (3d Cir. 1987) (pipeline not obliged to sell space to gas explorers with whom it was not in competition). That principle applies *a fortiori* here, where Epic was allowed to access Apple’s intellectual-property-protected iOS (prior to its breach) pursuant to the DPLA’s terms and conditions.
419. Epic contends that the essential facility doctrine affords standing to plaintiffs who are presently unable to compete with a defendant by virtue of that defendant’s denial of access to an essential facility. But all of the cases suggesting that would-be competitors have standing to bring essential facilities claims involved claims by actual competitors or former competitors driven out of business due to their alleged inability to access an essential facility. *See MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1092 (7th Cir. 1983) (claims brought by actual competitors of defendant); *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 538 (9th Cir. 1991) (same); *Hecht v. Pro-Football, Inc.*, 570 F.2d 982, 985 (D.C. Cir. 1977) (claims brought against owners of NFL team by a rival group of promoters who tried but failed to obtain a competing football franchise because they could not gain access to the city’s football stadium). Epic does not allege—much less provide evidence to show—that it was driven out of business based on Apple’s conduct here. Epic therefore lacks standing to bring an essential facility claim based on its own product market. *See Ferguson v. Greater Pocatello Chamber of Commerce, Inc.*, 848 F.2d

²⁴ Standing to bring an essential facility claim is addressed in § 8.1, pages 70–72 of the Joint Elements Submission.

976, 982–83 (9th Cir. 1988) (holding that a university renting its stadium to one producer of trade shows was not required to rent to other trade show producers precisely because the plaintiffs and defendant were not in competition).

C. Sherman Act Section 1 (Epic Counts 3, 5, and 6)

420. In addition to Section 2, Epic brings claims under Section 1 of the Sherman Act.
421. The core distinction between Section 2 monopolization claims and Section 1 claims is that Section 1 of the Sherman Act proscribes only “concerted action that restrains trade.” *Am. Needle, Inc. v. Nat’l Football League*, 560 U.S. 183, 190 (2010). The distinction is material, and the requirement of concerted action a significant one, because the Sherman Act “treat[s] concerted behavior more strictly than unilateral behavior.” *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984).
422. Epic’s claims under Section 1 must therefore all be evaluated through the lens of concerted activity—only if Epic can show coordinated activity among market participants may it take advantage of the standard for liability under Section 1.

i. Sherman Act Section 1 – Tying (Epic Count 6)²⁵

423. Count 6 of Epic’s complaint alleges that Apple unlawfully ties iOS App Distribution services (the alleged tying product market) to iOS In-App Payment Processing (“IAP”) services (the alleged tied product market). Dkt. 1 ¶¶ 233–45. Epic argues that the terms of the DPLA constitute an unlawful tying arrangement, because developers who distribute their apps through the App Store and who wish to offer digital in-app transactions on their apps must use IAP to conduct transactions with iOS users. *See generally id.* Epic contends that the alleged tying arrangement should be condemned under both the *per se* rule and the rule of reason.
424. Epic’s Section 1 tying claim fails at the outset because it relies on an improper market definition. Properly defined, there are not separate markets for iOS App Distribution services and IAP, but rather a single market for digital game transactions. *See supra* § II.B.ii (¶¶ 31–79). Epic’s tying claim is untenable under the proper market definition, because there can be no tying claim where there is only one relevant product market at issue. *See Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).
425. Even taking Epic’s tying claim on its own terms, it still has no merit. IAP is not a separate product from the App Store’s distribution services, much less on that Apple has ever made separately available; rather, it is an integrated functionality *within* those services. No demand exists for IAP that is separate from distribution via the App Store, and thus there can be no “tie” between IAP and the App Store. Moreover, Epic is not coerced into using IAP—developers distributing apps through the App Store are free to monetize their apps in a variety of ways that do not involve an in-app purchase. And finally, the evidence

²⁵ The elements of a tying claim are addressed in § 6, page 34 of the Joint Elements Submission.

shows that the App Store and its IAP functionality are procompetitive, not anticompetitive. Epic's tying claim fails.

a. Legal Principles²⁶

426. Tying involves the linking of two separate products from two separate product markets. *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006). In a tying arrangement, a party “conditions the sale of one product (the tying product) on the buyer’s purchase of a second product (the tied product).” *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 912 (9th Cir. 2008). “[T]he essential characteristic of an invalid tying arrangement lies in the seller’s exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms.” *Jefferson Par.*, 466 U.S. at 12; *see also Aerotec Int’l, Inc. v. Honeywell Int’l Inc.*, 836 F.3d 1171 (9th Cir. 2016) (“A tie only exists where the defendant improperly imposes conditions that explicitly or practically require buyers to take the second product if they want the first one.” (quotation marks omitted)); *Golden Boy Promotions LLC v. Haymon*, 15-CV-3378, 2017 WL 460736, at *7 (C.D. Cal. Jan. 26, 2017) (“[T]he main question is whether the defendant has made the first product effectively unavailable to those who do not buy its second product.” (quotation marks omitted)); *Nicolsi Distrib., Inc. v. FinishMaster, Inc.*, No. 18-CV-3587, 2019 WL 1560460, at *8 (N.D. Cal. Apr. 10, 2019) (“Because [the plaintiff] does not, and admittedly cannot, allege that [the defendant] conditioned the body shops’ purchase of paint on their purchase of supplies, [the plaintiff’s] tying claims fail as a matter of law.”).
427. Tying arrangements are evaluated under Section 1 of the Sherman Act using either *per se* or rule of reason analysis. *See Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 29 (1984). The *per se* rule that applies to tying claims is distinct from the *per se* rule that applies to other antitrust claims. Courts have “[c]ome to see that arguable tie-ins are to be found everywhere, [and] that most of them serve legitimate objectives without threatening competitive vitality in the second market or anywhere else and without even harming buyers.” 17 Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1701c (4th ed. 2020 supp.). As a result, the tying “*per se*” rule is “most peculiar”; for instance, even when tying is treated as *per se* illegal, “the Supreme Court has almost always been willing to consider a defendant’s offered justifications.” *Id.* ¶¶ 1701c, 1760(b); *see also Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 468 (7th Cir. 2020); *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987) (“We have recognized that antitrust defendants may demonstrate a business justification for an otherwise *per se* illegal tying arrangement.”).
428. Under the *per se* rule, “a plaintiff must prove: (1) that the defendant tied together the sale of two distinct products or services; (2) that the defendant possesses enough economic power in the tying product market to coerce its customers into purchasing the tied product; and (3) that the tying arrangement affects a not insubstantial volume of commerce in the

²⁶ The elements of a *per se* and a rule-of-reason tying claim are addressed in §§ 6.2 and 6.3, pages 37–39, 49–50 of the Joint Elements Submission.

tied product market.” *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 913 (9th Cir. 2008) (quotation marks omitted). Additionally, “[u]nder Ninth Circuit law,” a plaintiff must show that the tie has a “pernicious effect on competition and lack of . . . any redeeming virtue.” *Spindler v. Johnson & Johnson Corp.*, No. 10-CV-1414, 2011 WL 13278876, at *4 (N.D. Cal. 2011) (quoting *In re eBay Seller Antitrust Litig.*, 545 F. Supp. 2d 1027, 1033–34 (N.D. Cal. 2008)); see also *Siegel v. Chicken Delight*, 448 F.2d 43, 47 (9th Cir. 1971).

429. If a tying claim does not fall within the *per se* framework, it is analyzed under the rule of reason, under which the plaintiff must establish four elements to carry its burden on the first step of the analysis. These elements are similar to those that must be established under the *per se* rule. First, it must prove that “two separate product markets have been linked” through the alleged tying of two separate and distinct products. *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984). Second, it must show “the existence of a tie” by showing that the defendant “explicitly or implicitly imposes conditions linking the sale of a tying product with the sale of the tied product.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016). Third, it must prove that the defendant possesses market power in the relevant tying product market and that it was thereby “‘coerced’ into buying the tied products from the defendant.” *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 900 (9th Cir. 2008); see also *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006) (“[I]n all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product.”); *Paladin Assocs. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003) (“Essential to . . . a tying claim is proof that the seller coerced a buyer to purchase the tied product.”). And finally, it must show that the alleged tie “has a substantial anticompetitive effect that harms consumers” in the relevant tied product market. *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020); see *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1200 (9th Cir. 2012) (stating that plaintiff must show “an ‘actual adverse effect on competition’ caused by the tying arrangement” in the tied market).
430. The principal distinction between the *per se* rule and the rule of reason is that under the *per se* rule, if the plaintiff establishes the four requisite elements, the tie is unlawful unless the defendant’s justifications are sufficient to establish an affirmative defense. But under the rule of reason, establishing the same four elements satisfies only the plaintiff’s burden at the first step of the burden-shifting framework. The burden then shifts to the defendant “to show a procompetitive rationale for the restraint.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (quoting *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018)); accord *County of Tuolumne v. Sonora Cmty. Hosp.*, 236 F.3d 1148, 1159 (9th Cir. 2001). If the defendant makes that showing, the burden shifts back once again to the plaintiff, who must “show that an alternative is substantially less restrictive *and* is virtually as effective in serving the legitimate objective without significantly increased cost.” *County of Tuolumne*, 236 F.3d at 1159 (quotation marks omitted).

b. The *Per Se* Rule Is Inapplicable to This Case²⁷

²⁷ Application of the *per se* rule is addressed in § 6.1, page 34 of the Joint Elements Submission.

431. Because the elements of the *per se* rule and the rule of reason largely overlap—and because Epic cannot establish any of them—the question of what framework applies to Epic’s tying claim is somewhat academic. To the extent the framework affects the disposition of the case, however, the rule of reason, and not the *per se* rule, applies to Epic’s tying claim.
432. The categories of conduct condemned *per se* are “narrow.” *Texaco Inc. v. Dagher*, 547 U.S. 1, 8 (2006). *Per se* treatment is reserved for restraints that, “after considerable experience,” *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 9 (1979), have been found to “always or almost always . . . tend to restrict competition and decrease output,” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2283 (2018). For instance, “horizontal territorial limitations” are one of the few “classic examples of a *per se* violation” meriting an exception to the standard rule of reason analysis. *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 608 (1972). By and large, however, the rule of reason should govern antitrust tying claims, *particularly* in cases involving business models or arrangements without “close parallel[s] in prior antitrust case,” because “simplistic application of *per se* tying rules carries a serious risk of harm.” *United States v. Microsoft*, 253 F.3d 34, 89 (D.C. Cir. 2001); *see FTC v. Ind. Fed’n of Dentists*, 476 U.S. 447, 458–59 (1986) (“[W]e have been slow . . . to extend *per se* analysis to restraints imposed in the context of business relationships where the economic impact of certain practices is not immediately obvious.”).
433. As the Ninth Circuit recently emphasized, “novel business practices—*especially* in technology markets—should not be ‘conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use.’” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990–91 (9th Cir. 2020) (quoting *United States v. Microsoft*, 253 F.3d 34, 91 (D.C. Cir. 2001)). This statement aligns with the D.C. Circuit’s holding in *United States v. Microsoft* that in cases “involv[ing] software that serves as a platform for third-party applications,” courts should evaluate alleged ties under “the rule of reason, rather than *per se* analysis.” 253 F.3d at 84, 89.
434. Moreover, when there are “plausible arguments that a practice enhances overall efficiency, and makes markets more competitive, *per se* treatment is inappropriate, and the rule of reason applies.” *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1155 (9th Cir. 2003).
435. Both the Ninth Circuit and the D.C. Circuit have expressed deep concern that “wooden application of *per se* rules” to “platform software markets” could “cast a cloud over platform innovation.” *United States v. Microsoft*, 253 F.3d 34, 94–95 (D.C. Cir. 2001); *see FTC v. Qualcomm*, 969 F.3d 974, 991 (9th Cir. 2020); *see also In re: Cox Enters.*, 871 F.3d 1093, 1102 (10th Cir. 2017) (“Courts have also acknowledged that some industries or products are sufficiently distinct that *per se* treatment is inappropriate. This is especially true in the world of technology, where courts are often unfamiliar with the products and market structure, and thus can’t be certain of the potential for anticompetitive effects.”); Rachel S. Tennis & Alexander Baier Schwab, *Business Model Innovation and Antitrust Law*, 29 Yale J. on Reg. 307, 319 (2012) (explaining that “treat[ing] novel products or business practices as anticompetitive” can have long-lasting negative effects in technology

markets, where innovation “is essential to economic growth and social welfare” and “an erroneous decision will deny large consumer benefits”).

436. Although the required use of a platform’s proprietary payment solution for digital transactions is common in the industry (even beyond simply digital game transactions), no court has ever determined that such an arrangement constitutes tying, much less *per se* unlawful tying. And for good reason: These arrangements have had significant procompetitive effects, both in the game industry and the app industry more broadly. FOF ¶¶ 680–98; *see supra* § III.B.ii.d (¶¶ 352–67); *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 894 (2007) (holding that *per se* rule should be rejected where alleged restraint could have “either procompetitive or anticompetitive effects”); *see also* 17A Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1703g (4th ed. 2020 supp.) (recognizing “[m]ajor beneficial possibilities” of tying arrangements, including “protecting quality, lowering costs or increasing value, increasing price competition, aiding entry, or rewarding a valuable patent”).
437. Indeed, the Supreme Court has been *narrowing*, not expanding, the categories of conduct to which the *per se* rule applies. *See, e.g., Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 899–900 (2007) (overruling precedent holding that vertical price restraints should be evaluated under the *per se* rule); *Nat’l Collegiate Athletic Ass’n v. Bd. of Regents of Univ. of Oklahoma*, 468 U.S. 85, 100–01 (1984) (carving out exception to the general rule that horizontal price restraints should be evaluated under the *per se* rule).
438. Application of the rule of reason here also is consistent with economic literature authored by Epic’s own expert. In 2004, Dr. Evans coauthored an article arguing that “modern economic thinking supports a rule of reason approach toward tying,” rather than a *per se* approach. Christian Ahlborn et al., *The Antitrust Economics of Tying: A Farewell to Per Se Illegality*, 49 Antitrust Bulletin 287, 289–90 (2004). The authors explain that “the principal implication of several decades of economic investigation on the competitive effects of tying is that there should be *no* presumption on the part of competition authorities that tying and bundling are anticompetitive, even when undertaken by firms with monopoly power.” *Id.* at 329.
439. Epic asks the Court to break new ground—or perhaps more accurately, return to the stone age of antitrust law—and invalidate as *per se* unlawful Apple’s business practices. But the practices challenged here are light years away from being properly categorized as *per se* anticompetitive. In these circumstances, *Qualcomm* and *Microsoft* require the Court to reject Epic’s attempt to invoke the *per se* rule. Epic’s tying claim must instead be analyzed under the rule of reason.

c. iOS App Distribution and IAP Are Not Separate Products²⁸

²⁸ The requirement of two products is addressed in § 6.2.1, pages 40–41 of the Joint Elements Submission.

440. Epic’s claim fails under either the rule of reason or the *per se* rule because Epic cannot establish a prerequisite of any tying claim: that the alleged tying product (iOS app distribution services) and the alleged tied product (IAP) are “separate and distinct product[s].” *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 974 (9th Cir. 2008); *United States v. Microsoft Corp.*, 253 F.3d 34, 85 (D.C. Cir. 2001) (“[U]nless products are separate, one cannot be ‘tied’ to the other.”). Two principles are relevant in this case: integration and consumer demand.
441. *First*, as this Court has previously explained, two items are “a single product” if they are “an ‘integrated service.’” *Epic Games, Inc. v. Apple Inc.*, No. 20-CV-5640-YGR, 2020 WL 5993222, at *16 & n.28 (N.D. Cal. Oct. 9, 2020). After all, “[a]lmost every product can be viewed as a package of component products: a pair of shoes, for example, as a package consisting of a left shoe and a right shoe; a man’s three-piece suit as a package consisting of a jacket, vest, and pants; a belt as a package consisting of a buckle and a strap.” *Jack Walters & Sons Corp. v. Morton Bldg., Inc.*, 737 F.2d 698, 703 (7th Cir. 1984). To avoid absurd results, courts must, therefore, ensure that the two allegedly tied items are not merely “a package of components” that provide a single service to the customer. *Id.*; see *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 39 (1984) (“[T]here must be a coherent economic basis for treating the tying and tied products as distinct” because “[a]ll but the simplest products can be broken down into two or more components that are ‘tied together’ in the final sale.”).
442. To the extent Epic argues, through its experts, that “integration” is not a useful concept in the context of alleged tying, the law is otherwise. As established above, a finding that two products are integrated is in fact *legally* dispositive of a tying claim. Whatever the views of Epic’s *economic* experts, they cannot override the clear *legal* principles that make integration a controlling factor in a tying claim.
443. *Second*, aside from integration, the other way that courts evaluate whether two items are separate products is based on “the character of the demand for the two items.” *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 19 (1984). There must be “sufficient demand for the purchase of [the tied product] separate from [the tying product] to identify a distinct product market in which it is efficient to offer [the tied product] separately from [the tying product].” *Id.* at 21–22.
444. With respect to Epic’s claims, this separate-demand requirement means Epic must prove that some users (i.e., customers and developers) *want* IAP—which is not even functional outside of iOS—as an independent product separate from the App Store, and that “separating them is physically and economically possible.” 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1743 (4th ed. 2020).
445. To evaluate “consumer demand for the tied product separate from the tying product,” courts “examine[] direct and indirect evidence.” *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 975 (9th Cir. 2008). “Direct evidence addresses the question whether, when given a choice, consumers purchase the tied good from the tying good maker, or from other firms. Indirect evidence includes the behavior of firms without market power in the

tying good market, presumably on the notion that (competitive) supply follows demand.” *Id.* (citations omitted). Where “competitive firms always bundle the tying and tied goods,” then they are not two separate products, but “a single product.” *Id.*

446. The *Microsoft* court elaborated on this point, noting that the separate-demand test is only “a rough proxy” for evaluating whether a tying arrangement is “welfare-enhancing.” *United States v. Microsoft Corp.*, 253 F.3d 34, 87 (D.C. Cir. 2001). In the abstract, there “is always direct separate demand for products: assuming choice is available at zero cost, consumers will prefer it to no choice.” *Id.* But when “the entire ‘competitive fringe’ engages in the same behavior as the defendant,” there are likely “strong net efficiencies,” and “the tying and tied products should be declared one product.” *Id.* at 88 (quoting 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1744c4 (1996)).

IAP Is an Integrated Feature of iOS and the App Store

447. The evidence establishes that IAP is an integrated functionality of the App Store’s facilitation of digital transactions. FOF ¶¶ 651–53; *see United States v. Microsoft Corp.*, 253 F.3d 34, 93 (D.C. Cir. 2001) (noting that “integration [is] common” among technological products and services). As the Ninth Circuit explained in *Rick-Mik Enterprises, Inc. v. Equilon Enterprises, LLC*, in the context of credit-card processing services and franchise arrangements, if payment processing services are “an essential ingredient of the [tying product’s] formula for success, there is but a single product and no tie in exists as a matter of law.” 532 F.3d 963, 974 (9th Cir. 2008) (quotation marks omitted). The tying product and the “method of processing [payment] transactions are not separate products, but part of a single product.” *Id.* And, like in franchise arrangements—which provide for “signs, advertising, marketing, appearance, as well as methods of delivery and payment,” each of which is “part and parcel of a franchise,” *id.*—IAP is but one component of the full suite of services offered by iOS and the App Store, FOF ¶ 651.
448. IAP is part of a comprehensive set of services provided by the App Store, and offers procompetitive benefits to both consumers and developers. FOF ¶¶ 680–98. For instance, for in-app purchases, the ability to deliver and charge for digital content is what unlocks the “freemium” business model, whereby developers offer an app for free but charge consumers a premium to enable certain features within the app. FOF ¶ 694. It is this model that Epic has used to great effect with *Fortnite*. FOF ¶ 696. IAP (for in-app purchases) and Apple’s payment mechanism for paid apps are what allow Apple to track the revenue generated by each developer and collect the appropriate commission. FOF ¶ 680–82. If Apple were not able to collect a commission through the required use of IAP, then it would receive no revenue at all for any app that uses the freemium model—despite the significant support Apple provides at every stage of the app’s development. FOF ¶ 681.
449. As noted previously, the App Store is a two-sided transaction platform, meaning that the App Store is “best understood as supplying *only one product*—transactions—which is jointly consumed by a [consumer] and a [developer].” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 n.8 (2018) (emphasis added). Thus, the App Store does not provide app

distribution services *and* in-payment processing, but instead provides a *single* product: digital game transactions. The nature of the product that Apple supplies therefore necessarily means that IAP is an integrated feature of this transaction. Just as “a car with tires attached might be deemed a single product because a vehicle that can be driven is the essence of what the customer buys,” 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1741 (4th ed. 2020), digital game transactions are a critical aspect of what consumers and developers obtain when they deal with the App Store, and IAP is simply one part of that single product.

450. The integration of IAP into the App Store has many other benefits to users of the platform as well, further supporting the conclusion that it is an integrated feature of the App Store. For instance, IAP provides a secure and centralized system for recording sales, managing payments to developers, and collecting commissions from developers. FOF ¶ 681. It also provides consumers with a seamless ecosystem that syncs across family members and devices, detects security or fraud threats, and permits purchases to be restored on new devices. FOF ¶ 688. And it allows consumers to provide their private financial information to a single trusted company—Apple—rather than countless third-party payment processors of uncertain repute. FOF ¶ 685. Developers, too, directly benefit from IAP, which assists them with currency conversion and tax-law compliance and performs fraud and credit-worthiness checks on their behalf. FOF ¶ 692. For all these reasons and more, IAP is an integrated functionality within the App Store’s broader set of services, not a standalone product. *Cf. Serv. & Training, Inc. v. Data Gen. Corp.*, 737 F. Supp. 334, 343 (D. Md. 1990) (rejecting tying claim because alleged tied product was “one feature of [defendant’s] integrated and unified product”). Just as in *Rick-Mik*, where “the method of receiving and processing credit transactions [was] an integral part of the franchise’s operation,” 532 F.3d 963, 974 (9th Cir. 2008), here, IAP is equally an “integral part” of the App Store’s operations.
451. This conclusion is confirmed by a survey of the App Store’s “competitive fringe.” *United States v. Microsoft Corp.*, 253 F.3d 34, 88 (D.C. Cir. 2001). Nearly all competing platforms, including Google Play, the PlayStation Store, the Nintendo eShop, the Microsoft Store, Steam, and the Samsung Galaxy Store, have also integrated distribution, content delivery, and payment functionalities. FOF ¶¶ 697–697.5; *see also* Dkt. 118 at 18. The only significant outlier is EGS, on which payment was an integrated feature of EGS until December 2019, after the preliminary planning for Project Liberty and this eventual litigation was already well under way. FOF ¶ 251.4. Thus, where, as here, there is “bundling by all competitive firms,” then “the tying and tied products should be declared one product.” *Microsoft*, 253 F.3d at 88; *cf. In re: Cox Enters., Inc.*, 871 F.3d 1093, 1109 (10th Cir. 2017) (holding that the bundling of set-top-boxes to premium cable was not a per se tie where “all cable companies rent set-top-boxes to consumers,” because that fact suggests that bundling “is simply more efficient than offering them separately”).
452. The integration of IAP into the App Store is also made apparent by the fact that Epic has not challenged the commission that Apple charges for the distribution of paid apps or the mechanism that collects these payments, which is executed through a different set of APIs from IAP. Epic apparently has no complaint with Apple collecting a commission for licensing of its intellectual property for the *distribution* of apps; its complaint centers on

the mechanism for delivering (and charging for) content within those apps. Yet Epic’s focus on IAP to the exclusion of the APIs used for paid apps is simply arbitrary—both features are integral components of how the App Store operates, and neither is a distinct “product” that Apple offers outside the context of the App Store. To speak of a consumer’s payment experience through the App Store as a distinct “product” is just as irrational as calling a retailer’s point of service a separate “product,” and Epic’s effort to avoid the analogy by not mentioning paid apps fails.

453. Accordingly, IAP is an integrated feature of iOS and the App Store, and not a separate product.

There Is No Separate Demand for IAP

454. Similarly, no evidence was presented showing that demand exists for IAP as a standalone product.
455. As an initial matter, Epic’s argument mischaracterizes IAP and its function. Epic contends that IAP is a mere “payment processor,” and thus argues that the Court should assess demand for an alternative payment processor. Dkt. 1 ¶ 242. But this description of IAP is demonstrably incorrect. As described above, IAP is much more than a payment processor—IAP consists of the entire technological infrastructure that delivers digital content (like in-game upgrades or features) from the developer to the user. FOF ¶ 651. That process *necessarily* runs through iOS, because the content is being delivered and downloaded to the consumers’ iPhone or iPad. The actual payment for the product is one component of those services, but the entire process of executing a digital transaction between a consumer and a developer is, in reality, what IAP facilitates.
456. Payment processing is thus simply an input into the larger bundle of services provided by the IAP system. FOF ¶ 651. Indeed, IAP does not itself even *process payments*—that function is performed by a third-party settlement provider like Chase Bank with which Apple contracts. *Id.* And unlike the purported alternatives that Epic proposes (e.g., PayPal), Apple has never tried to market the technology for use on other digital transaction platforms, and Epic does not contend otherwise. FOF ¶ 656.
457. But even if the Court were to focus narrowly—and incorrectly—on the limited subset of payment functions performed by IAP, there is still no separate demand for an alternative payment processor. In the but-for world where developers could use an alternative processor, Apple would still be contractually entitled to its commission on any purchase made within apps distributed on the App Store. Thus, so long as the alternative processor charged a non-zero commission or fee for its services, no economically rational developer would choose to use the alternative processor, because on each transaction, they would *still* have to pay Apple its commission, *and* they would have to pay the alternative processor a commission for its services. FOF ¶ 659.
458. For that reason, Epic’s “evidence”—obtained through its willful breach of the DPLA—about the number of iOS consumers who used Epic direct payment when given the opportunity after the “hotfix” is unpersuasive. *See* Dkt. 118 at 25 (“It is not surprising that

some customers would choose competing payment services if they provided lower prices offered only because of this non-payment.”). For the same reason, the fact that some developers like Facebook and Spotify have tried to avoid Apple’s commission by bypassing IAP is not evidence that there is separate demand for IAP, only that developers would prefer not to pay Apple a commission. FOF ¶ 658. Epic’s reliance on this evidence thus “conflates competition on the merits with Epic Games’ goal of avoiding Apple’s 30%.” Dkt. 118 at 25. Even under Epic’s conception of the market, IAP is not a distinct product. In sum, whether analyzed as an integrated functionality or from the perspective of consumer demand, IAP is not a separate product from iOS App Distribution.

d. The Two “Products” Are Not Tied²⁹

459. Even if Epic could demonstrate that IAP and iOS app distribution were two separate products—and it cannot—its tying claim would still fail (under either the *per se* rule or the rule of reason) because it cannot establish the “most fundamental requirement” of a tying claim: “the existence of a tie.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).
460. Epic must show that the “sale of the desired (‘tying’) product [was] conditioned on purchase of another (‘tied’) product.” *Id.*; see also 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1752b (4th ed. 2020) (defining a tie as the improper imposition of “conditions that explicitly or practically require buyers to take the second product if they want the first one”). This condition must “require[] customers to take the defendant’s product B in order to get its A—thereby foreclosing, to that extent, rival B suppliers from access to those customers.” 17D Areeda & Hovenkamp, *supra*, ¶ 1752c; see also *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 615 (9th Cir. 1990) (similar).
461. While a tying condition “need not be spelled out in express contractual terms,” it is not enough for a plaintiff to show the defendant’s conduct amounted to a “‘de facto’ condition.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178–79 (9th Cir. 2016). Consequently, “technological interrelationship among complementary products” is insufficient to establish a tie. *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542 (9th Cir. 1983); see also *Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37, 2009 WL 10678940, at *5 (N.D. Cal. Oct. 30, 2009) (that technological products are developed, and are optimally used, in conjunction with one another does not establish a tie).
462. Epic cannot show such a tying condition, because none exists. Developers can distribute apps through the App Store without using in-app purchase options for their apps, and thus can distribute apps without *using* or *paying* for IAP. The DPLA requires developers to agree to various terms and conditions prior to distributing apps through the App Store, such as a requirement that the developers not “violate, misappropriate, or infringe any Apple” intellectual property. FOF ¶ 106.2. But there is no requirement that developers must use IAP in order to distribute apps through the App Store, because there is no requirement that developers offer in-game digital transactions. Indeed, the great majority (83%) of apps

²⁹ The requirement of a tie is addressed in § 6.2.2, page 42 of the Joint Elements Submission.

distributed through the App Store are entirely free and thus do not use IAP *at all*. FOF ¶ 551. There can be no tying claim when the majority of purchasers of the tying product (here, developers) do not even *receive* the tied product. Accordingly, there is no contractual tie nor a price tie.

463. It is true that *if* a developer wishes to monetize its iOS app through in-app purchases facilitated by the App Store, *then* it must use IAP. But Apple does not force developers to monetize their apps through in-app purchases. Instead, developers like Epic are free to monetize (or not monetize) their apps in the App Store in any number of ways that do not involve IAP, including through up-front payment or selling advertising space within the apps. FOF ¶ 93. The fact that some developers might prefer to monetize their apps through in-app purchases rather than through advertising does not mean that the distribution and IAP are tied, only that developers often, when given the choice, elect to use Apple's IAP service rather than alternative means of monetization.
464. Epic incorrectly contends that the fact that developers like Epic could adopt alternative monetization strategies like advertising does not show that there is no tie, because (it claims) in-game ads would create a negative experience for players. But as a legal matter, a tie does not exist just because a plaintiff believes that it would be better off if the defendant altered the terms on which its services were offered. Rather, a tie exists only if the defendant actually *requires* the plaintiff to “take the defendant's product B in order to get its A.” 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1752c (4th ed. 2020)). Apple does not require developers to use IAP in order to distribute apps on the App Store, and there therefore is no tie.
465. Moreover, the App Store Review Guidelines explicitly permit developers of cross-platform games to let iOS users access content or other features purchased on other platforms within the iOS app, meaning that iOS users can access all of the content featured on an app available through in-app purchases without ever making a purchase that requires the use of IAP. FOF ¶ 165.1. In no sense, therefore, is the use of IAP a requirement for a developer to distribute apps through the App Store.
466. Epic's business model confirms that the IAP is not tied to the use of the App Store. An iOS user who plays *Fortnite* may elect to purchase V-Bucks through the App Store, in which case the transaction will be processed through IAP, as contemplated by the DPLA. That same user, however, could purchase V-Bucks on another platform—his PC or his PlayStation—without going through IAP, yet still use those V-Bucks to purchase additional in-app content on his iPhone. FOF ¶ 495.2. The consumer could even access EGS through the Safari web browser on his iPhone and purchase V-Bucks directly from Epic without using IAP, all on an iOS device. *Id.* From the consumer's perspective, it is immaterial whether IAP is used to process his payment, because he is able to use his V-Bucks across all versions of *Fortnite* that he has downloaded. Thus, Epic is never compelled to use IAP.

e. Epic Is Not Coerced into Using IAP³⁰

467. For similar reasons, Epic cannot demonstrate that Apple coerces it into using IAP—a required element under either the *per se* rule or the rule of reason. To prove coercion, Epic must prove by a preponderance of the evidence that Apple exploited its alleged control over the tying product to force Epic into the purchase of the tied product. *See* ABA Model Civil Jury Instrns. Ch. 2.E.7 (2016).
468. This requirement is twofold. First, Epic must prove that Apple has market power in the market for the tying product. *See Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006). Second, Epic “must present evidence that the defendant went beyond persuasion” and in fact “coerced or forced its customer to buy the tied product in order to obtain the tying product.” *Paladin Assocs., Inc. v. Montana Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003); *see also It’s My Party, Inc. v. Live Nation, Inc.*, 811 F.3d 676, 684 (4th Cir. 2016) (rejecting argument that “tying occurs any time a seller who has market power over product A *offers* it for sale together with product B”).
469. To prove market power, Epic must show the defendant had “the power to control prices or exclude competition” in the tying product market. *Paladin Assocs.*, 328 F.3d at 1158; *see also Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 972 (9th Cir. 2008) (“If [the defendant] lacks market power in the [tying product] market, there can be no cognizable tying claim.”). “The best way to show” sufficient market power “is to establish directly that the price of the tied package is higher than the price of components sold in competitive markets.” *Parts and Elec. Motors, Inc. v. Sterling Elec., Inc.*, 826 F.2d 712, 720 n.7 (7th Cir. 1987). Aside from such direct evidence, Epic may prove market power by showing Apple had a sufficiently high market share such that purchasers do not have alternative sources of the tying product or a reasonably interchangeable substitute. *See supra* § III.C.i.c (¶ 445).
470. Apple’s contractual rights cannot be conflated with economic power. A “defendant’s economic power [must] be derived from the market, not from a contractual relationship that the plaintiff has entered into voluntarily.” *Rick-Mik Enters.*, 532 F.3d at 973; *see also Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 443 (3d Cir. 1997) (“[W]here the defendant’s ‘power’ to ‘force’ plaintiffs to purchase the alleged tying product stems not from the market, but from plaintiffs’ contractual agreement to purchase the tying product, no claim will lie.”). In other words, “courts must attempt to ascertain a defendant’s economic position in the relevant market, rather than its power pursuant to a particular contract, when considering whether a defendant has market power.” *Maris Distrib. Co. v. Anheuser-Busch, Inc.*, 302 F.3d 1207, 1219 (11th Cir. 2002).
471. Apple plainly does not have market power in the properly defined market for digital game transactions. *See supra* § III.B.i.a (¶¶ 229–36). Thus, market definition is yet again fatal to Epic’s claim.

³⁰ Coercion is addressed in § 6.2.3, pages 43–44 of the Joint Elements Submission.

472. Even if the relevant tying product is iOS app distribution and the tied product is iOS in-app payment, Apple still lacks market power. As set forth above, *see supra* § III.B.i.a (¶¶ 237–45), Apple lacks market power in any alleged primary market for iOS app distribution because both consumers and developers have alternatives to the App Store and IAP. Without market power in the alleged primary market, Apple has no power to coerce developers into purchasing a tied product they do not want.
473. In addition to market power, Epic must demonstrate that it actually “was ‘coerced’ into buying the tied products from the defendant.” *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 915 (9th Cir. 2008). Epic cannot demonstrate coercion, because as noted above, Apple does not “force[]” Epic to use IAP. *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003). As explained, there are many monetization strategies available to Epic that would permit it to distribute apps on the App Store *without* using IAP. Epic is thus “free to take [app distribution] by itself” and decline to use IAP. *Northern Pac. R. Co. v. United States*, 356 U.S. 1, 7 n.4 (1958). The fact that Epic might prefer to monetize its apps through in-app purchase rather than through advertising show only the value of the allegedly tied product and the desire of many consumers to obtain the tied product in a bundle—it does not show that Epic had no choice in the matter.
474. Epic’s argument, in essence, is that it is entitled to conduct digital game transactions through Apple’s platform in precisely the manner it wants to, and that if Apple’s policies restrict it in any way from doing so, then that is illegal coercion. But Epic’s “freemium” business model on the App Store exists in the first place only because Apple’s platform facilitated the business model by making it possible to deliver and charge for digital content within native iOS apps distributed through the App Store. Now that Epic has found success using this model, it claims that the same policies that allowed it to thrive in the first place are “coercive.” But it is not coercive for Apple to demand that Epic adhere to the terms of its longstanding licensing agreement, without which Epic’s iOS version of *Fortnite* would not even exist.

f. There Is No Foreclosure of Any Significant Share of the Relevant Market

475. In order to prevail on its *per se* theory of tying, Epic must establish that “a total amount of business, substantial enough in terms of dollar-volume so as not to be merely *de minimis*, is foreclosed to competitors by the tie.” *Fortner Enters., Inc. v. U.S. Steel Corp.*, 394 U.S. 495, 501 (1969). In other words, the foreclosed business must represent either “a substantial dollar-volume [or] a substantial portion of the relevant market.” *Datagate, Inc. v. Hewlett-Packard Co.*, 60 F.3d 1421, 1425 (9th Cir. 1995). Epic has failed to satisfy this element.
476. There is no foreclosure here because the DPLA does not prevent developers from monetizing their game apps or executing digital transactions in ways that do not involve IAP. iOS developers are free to offer their apps on platforms other than iOS, as most do. FOF ¶¶ 351–52. Even on iOS, developers may charge an upfront fee for their apps, use advertising, or distribute their app as a web app through the Safari web browser (including through new game streaming platforms). FOF ¶¶ 93, And iOS (unlike some platforms)

permits a “cross-wallet” whereby users can purchase virtual currency on other platforms (e.g., EGS) and spend that currency through an iOS app without going through IAP. FOF ¶ 255.2. There is thus no “foreclosure” of *any* commerce, because developers and users have myriad ways to execute digital transactions that do not involve IAP.

477. Epic itself has used these alternative options. A majority of iOS *Fortnite* players who make purchases do so *only* on non-iOS platforms and then access that content on their iOS version of *Fortnite*. FOF ¶ 370. Epic also sells V-Bucks through EGS and other platforms that can be spent on iOS without going through IAP. FOF ¶ 367. It also has sold promotional materials inside of *Fortnite*. FOF ¶ 674. As regarding Epic, there plainly is no “foreclosure” of commerce.
478. Indeed, far from foreclosing any share of the market, IAP actually *increases* the size of the digital game transactions market by giving developers different ways in which to execute transactions. FOF ¶ 679. IAP facilitates the existence of the “freemium” and “paymium” models, which enable developers to attract and transact with price-sensitive customers who might want to try out an app before spending more on advanced or special features. *Id.*
479. In sum, none of Apple’s conduct here has foreclosed a significant share of the relevant market.

g. The App Store and IAP Are Procompetitive³¹

480. Finally, Epic cannot establish the final element of its tying claim under either the *per se* rule or the rule of reason—that Apple’s integrated business model has a “pernicious” or “substantial” anticompetitive effect.
481. Where the *per se* rule applies, a legitimate business justification is an affirmative defense to a tying claim. *See Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987) (“[A]ntitrust defendants may demonstrate a business justification for an otherwise *per se* illegal tying arrangement.”).
482. Where, however, the rule of reason applies, procompetitive business justifications are considered as part of the burden-shifting analysis, and the ultimate burden rests at all times with Epic. *See infra* § III.C.ii.b (¶¶ 513–15).
483. Regardless of which party bears the burden, however, any alleged tying between app distribution and IAP is redeemed by the significant procompetitive justifications of IAP, outlined above. *See supra* § III.B.ii.d (¶¶ 352–67). For example, Epic’s expert stated in a 2013 publication that in order to “increase the welfare” of its consumers, “an ecommerce platform might require merchants to use its payments platform thereby bundling both matchmaking and payment services together . . . [to] make it easier for consumers to pay efficiently.” David S. Evans, *Economics of Vertical Restraints for Multi-Sided Platforms*, Competition Policy Int’l, Spring 2013, at 10.

³¹ Pernicious effect and business justifications are addressed in §§ 6.2.5–6.2.6, pages 46–48 of the Joint Elements Submission.

484. Such is the case here. Integrating IAP into the App Store gives consumers a seamless experience, providing a one-stop shop for in-app payment and offering a secure transaction platform. FOF ¶ 687. And developers benefit too, because they can monetize their apps without having to search for payment solutions, and can also benefit from the fact that many of their iOS users will already have a payment profile in place to make purchases on new apps they download. FOF ¶ 691.
485. Whether analyzed under the *per se* rule or the rule of reason, the procompetitive nature of the IAP functionality dooms Epic’s tying claim.

ii. Sherman Act Section 1 – Unreasonable Restraint of Trade in the “iOS App Distribution Market” (Epic Count 3)³²

486. Epic claims in Count 3 that Apple has unreasonably restrained trade in the “iOS App Distribution Market,” by “forc[ing] developers to agree to Apple’s unlawful terms contained in its [DPLA] and to comply with Apple’s App Store Review Guidelines, including the requirement iOS developers distribute their apps through the App Store.” Dkt. 1 ¶ 210.
487. This claim fails for the simple yet dispositive reason that Epic has not shown that Apple “agreed” with anyone to restrain trade, as required for a Section 1 claim. The contractual terms of which Epic complains are imposed unilaterally by Apple as a condition of using its intellectual property and other resources, and are applied equally to all developers. Indeed, Epic has labeled the DPLA a “contract of adhesion,” Dkt. 1 ¶ 70.
488. But even if Epic could demonstrate such an agreement, its claim would still fail under the rule of reason analysis: Apple does not have market power in the relevant market for digital game transactions, the alleged restraints do not have anticompetitive effects, and in any case, the restraints are supported by multiple strong procompetitive rationales for which Epic has proposed no reasonable less restrictive alternatives.

a. There Is No Concerted Action³³

489. Section 1 of the Sherman Act proscribes only “concerted action that restrains trade.” *Am. Needle, Inc. v. Nat’l Football League*, 560 U.S. 183, 190 (2010). “Unilateral conduct by a single firm, even if it appears to restrain trade unreasonably, is not unlawful under section 1 of the Sherman Act.” *The Jeanery, Inc. v. James Jeans, Inc.*, 849 F.2d 1148, 1152 (9th Cir. 1988) (quotation marks omitted). As a result, a threshold requirement of any Section 1 claim is “the existence of an agreement.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).
490. “One way of proving concerted action [under § 1] is by express agreement.” *Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 608 F. Supp. 2d 1166, 1192 (N.D. Cal.

³² The elements of an unreasonable restraint of trade under Section 1 are addressed in § 5.1, page 22 of the Joint Elements Submission.

³³ Concerted action is addressed in § 5.1, page 23 of the Joint Elements Submission.

2009); *see also Paladin Assocs., Inc. v. Montana Power Co.*, 328 F.3d 1145, 1153 (9th Cir. 2003) (“[E]xpress ‘agreements’” are “direct evidence of ‘concerted activity’” and satisfy the first element of a Section 1 claim.).

491. No agreement exists, however, if “[t]here is no ‘meeting of the minds’” but rather only a unilateral “command[]” that others merely “comply with.” *Costco Wholesale Corp. v. Maleng*, 522 F.3d 874, 898 (9th Cir. 2008). For this reason, courts have rejected Section 1 claims in which the defendant merely promulgated policies or contractual terms to which potential counterparties were required to adhere. *See The Jeanery, Inc. v. James Jeans, Inc.*, 849 F.2d 1148, 1160 (9th Cir. 1988) (“This termination was pursuant to James Jeans’ announced policy as reiterated in its conversations with its dealers” and therefore “was unilateral, independent action taken by James Jeans . . . , [a]nd it did not violate section 1”); *Relevant Sports, LLC v. U.S. Soccer Fed’n, Inc.*, No. 19-CV-8359, 2020 WL 4194962, at *7 (S.D.N.Y. July 20, 2020) (U.S. Soccer Federation’s compliance with its obligation to follow FIFA policies against sanctioning certain soccer matches was unilateral conduct outside the scope of Section 1); *Baar v. Jaguar Land Rover N. Am., LLC*, 295 F. Supp. 3d 460, 465 (D.N.J. 2018) (a “unilaterally implemented [] Policy” imposed by Jaguar Land Rover on “dealers” was not actionable under Section 1).
492. Here, the only “agreement” Epic can point to is the DPLA, which all developers must agree to in order to obtain a license to use Apple’s valuable intellectual property and distribute native iOS apps through the App Store. The terms of the DPLA are not negotiated between Apple and developers, but rather are standardized terms of access to iOS and the developer tools. FOF ¶ 102. If a developer refuses to agree to the terms, Apple will not license its intellectual property, and the developer cannot distribute native iOS apps through the App Store. FOF ¶ 101.
493. As a matter of law, such a unilateral imposition of constraints on a business partner is not an “agreement” within the meaning of the Sherman Act. For instance, “[a] manufacturer . . . generally has a right to deal, or refuse to deal, with whomever it likes, as long as it does so independently.” *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761 (1984). That manufacturer “can announce its resale prices in advance and refuse to deal with those who fail to comply.” *Id.* Similarly here, Apple has imposed terms of access (analogous to the pricing terms in *Monsanto*) in advance, “enforce[d]” them against developers, *Baar v. Jaguar Land Rover N. Am., LLC*, 295 F. Supp. 3d 460, 465 (D.N.J. 2018), and refused to deal with developers who do not comply.
494. Epic’s Complaint could not be any clearer that Epic and other game app developers “had no involvement in the establishment or enforcement of the allegedly anticompetitive provisions of the contract[]” or Guidelines. *Toscano v. Professional Golfers Ass’n*, 258 F.3d 978, 984 (9th Cir. 2001). As the Complaint states, it is *Apple* that requires developers to agree to the “terms contained in its [DPLA] and to comply with Apple’s App Store Review Guidelines.” Dkt. 1 ¶ 210. In other words, Apple “independently set the terms,” and game app developers “merely accepted them.” *Toscano*, 258 F.3d at 984.
495. In similar circumstances, one court has held that agreements “unilaterally impose[d]” by technology platforms upon developers that “utilize the [platform]” do not constitute

concerted action. *Sambreel Holdings LLC v. Facebook, Inc.*, 906 F. Supp. 2d 1070, 1077 (S.D. Cal. 2012) (holding that Facebook’s requirement that application developers agree to use only approved advertising partners, with whom Facebook had separate agreements, was not actionable under Section 1). So too here: Apple unilaterally imposed its policies on game app developers like Epic.

496. It would be a misapplication of the antitrust laws to hold that unilaterally imposed terms of an agreement can constitute an unlawful contract or combination under Section 1. The Sherman Act draws a sharp distinction between concerted conduct and unilateral conduct and “treat[s] concerted behavior more strictly than unilateral behavior.” *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984). That is because “[c]oncerted activity inherently is fraught with anticompetitive risk” in that “[i]t deprives the marketplace of the independent centers of decisionmaking that competition assumes and demands.” *Id.* at 768–69. Thus, “[t]he meaning of the term ‘contract, combination . . . , or conspiracy’ is informed by the basic distinction in the Sherman Act between concerted and independent action that distinguishes § 1 of the Sherman Act from § 2.” *Am. Needle, Inc. v. Nat’l Football League*, 560 U.S. 183, 190 (2010) (some quotation marks omitted). And Section 1 therefore “applies *only* to concerted action that restrains trade.” *Id.* (emphasis added).
497. If the unilateral imposition of contract terms could give rise to a Section 1 claim for unreasonable restraint of trade, the Sherman Act’s careful distinction between concerted and unilateral conduct would be eliminated. Distinguishing between competitive and anticompetitive unilateral conduct is a difficult (and costly) task for courts, *see* 19A Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1902b (4th ed. 2020 supp.), and that is why plaintiffs challenging unilateral conduct must satisfy the more exacting standard of Section 2. It is therefore inappropriate to use the Section 1 standard for liability in a case, such as this one, involving only unilateral conduct by an alleged monopolist.
498. There is no legal support for the assertion that “coercive conduct” by a firm may be treated as an “agreement” for purposes of Section 1. *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986).
499. *First*, the line of cases suggesting that an “agreement” under Section 1 can be formed by coercive conduct “has been cast into some doubt” by the Supreme Court, *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986), and should not be treated as good law, *see Blair v. All Am. Bottling Corp.*, No. 86-CV-1426, 1988 WL 150814, at *3 (S.D. Cal. Aug. 9, 1988) (declining to apply coercive-conduct caselaw). Indeed, permitting a plaintiff to establish concerted action by pointing to coercive conduct would run afoul of the Sherman Act’s division between unilateral and concerted conduct in precisely the same way that treating a unilateral imposition of contracts terms as “concerted” activity would.
500. *Second*, even if unilateral coercive conduct could uniquely give rise to Section 1 liability, Apple has not engaged in any coercive conduct. The coercive conduct contemplated by cases like *Albrecht v. Herald Co.* involves something “in addition to the ‘mere announcement of [a] policy and the simple refusal to deal’” with those who will not comply. 390 U.S. 145, 149 (1968), *overruled on other grounds by State Oil Co. v. Khan*,

522 U.S. 3 (1997). In other words, there must be some *additional* threat or menace to the allegedly coerced party, beyond simply a refusal to deal. *See Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986). Here, however, Apple has never threatened Epic or other game app developers; it “simply warned [them] of its policy and enforced it against” them if they failed to abide by the policy. *Id.* at 1479. The App Store, and Apple’s services, “were always available subject to the condition that [it] not be used” to violate Apple policy, such as by circumventing IAP. *Id.*

501. Because Apple unilaterally imposed its policies against game app developers, including Epic, and did not coerce them into any unlawful agreement, Epic’s Section 1 concerted-action claim must fail as a matter of law.

b. Epic’s Claim Fails Under the Rule of Reason³⁴

502. Even if Epic could show that an agreement exists, its claim would fail under the rule of reason’s burden-shifting framework applicable to Epic’s Section 1 claims.
503. “[T]he rule of reason requires courts to conduct a fact-specific assessment of ‘market power and market structure . . . to assess the [restraint]’s actual effect’ on competition.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (quoting *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984)). “In its design and function[,] the rule distinguishes between restraints with anticompetitive effect that are harmful to the consumer and restraints stimulating competition that are in the consumer’s best interest.” *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886 (2007).

Epic Has Not Shown That Apple’s Policies Have Anticompetitive Effects³⁵

504. Under the rule of reason, “the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). As discussed above, *see supra* § III.B.i.b (¶¶ 246–83), the conduct on which Epic relies for its antitrust claims cannot be considered anticompetitive or exclusionary as a matter of law.
505. “A plaintiff may prove that a restraint has anticompetitive effect either ‘directly or indirectly.’” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 989 (9th Cir. 2020) (quoting *Am. Express*, 138 S. Ct. at 2284). “Direct evidence includes proof of actual detrimental effects on competition, such as reduced output, increased prices, or decreased quality in the relevant market.” *Id.* (citation and quotation marks omitted). “Indirect evidence involves ‘proof of market power plus some evidence that the challenged restraint harms competition.’” *Id.* (quoting *Am. Express*, 138 S. Ct. at 2284). “Allegations that conduct ‘has the effect of reducing consumers’ choices or increasing prices to consumers do[] not sufficiently allege an injury to competition . . . [because] [b]oth effects are fully consistent

³⁴ The rule of reason is addressed in § 5.2, page 23 of the Joint Elements Submission.

³⁵ Anticompetitive effects are addressed in § 5.2.2, pages 28–29 of the Joint Elements Submission.

with a free, competitive market.” *Id.* at 990 (quoting *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1202 (9th Cir. 2012)). Epic has not met its burden to show, by either direct or indirect evidence, that Apple’s policies have any anticompetitive effect.

506. Epic has introduced no direct evidence of detrimental effects on competition, such as reduced output or increased prices in the relevant market. As explained in detail *supra* § III.B.i.c (¶¶ 284–98), Apple’s policies have a decidedly *pro*competitive effect. Indeed, Apple has never increased its commission rate, despite the vastly increased number of digital game transactions since the App Store was launched in 2008, and Apple has in fact reduced the commission rate significantly for most developers, and a further subset of apps.
507. Nor has Epic shown any anticompetitive effects through indirect evidence, because it cannot establish an “essential ingredient in a rule-of-reason case”: market power. *Hahn v. Oregon Physicians’ Serv.*, 868 F.2d 1022, 1026 (9th Cir. 1988). Apple lacks market power both in the correct relevant market of digital game transactions and in Epic’s erroneous “iOS App Distribution” market.
508. Market power under Section 1 requires a lesser showing than monopoly power under Section 2. *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 480 (1992). In the Ninth Circuit, “[c]ourts generally require a 65% market share to establish a prima facie case of market power.” *Image Tech Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1206 (9th Cir. 1997), and “a market share of less than 50 percent is presumptively insufficient to establish market power,” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438 (9th Cir. 1995).
509. As explained *supra* § III.B.i.a (¶¶ 229–36), Apple lacks market power in the relevant market for digital game transactions. Apple’s share of the market is, at its most conservative, 37.5%, FOF ¶ 493.2—far below the 50% market share threshold the Ninth Circuit has deemed presumptively insufficient to show market power. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438 (9th Cir. 1995). Apple does not have market power in the relevant market.
510. Even if Epic could show market power, it would *also* have to prove “some other ground for believing that the challenged behavior could harm competition in the market, such as the inherent anticompetitive nature of the defendant’s behavior or the structure of the . . . market.” *Tops Markets, Inc. v. Quality Markets, Inc.*, 142 F.3d 90, 97 (2d Cir. 1998). As discussed above, there is no evidence of anticompetitive effects here: Prices are *declining* and output is *increasing*. *See supra* § III.B.i.c (¶¶ 284–98). And Epic has not shown that “new rivals are barred from entering the market and . . . that existing competitors lack the capacity to expand their output.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1439 (9th Cir. 1995). On the contrary, new competitors like Nvidia’s GeForce Now are constantly entering the game app transaction market, and there is nothing preventing Apple’s current competitors, including Microsoft and Sony, from adopting new business strategies to expand their market share.
511. Likewise, even under Epic’s erroneous “iOS App Distribution” market, for the reasons already stated, *supra* § III.B.i.a (¶¶ 237–45), Apple lacks market power.

Apple's Conduct Has Many Procompetitive Business Justifications³⁶

512. Even if Epic could carry its initial burden, Apple has carried its burden of showing “procompetitive rationale[s]” for its allegedly unlawful conduct. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018); *In re Nat’l Collegiate Athletic Ass’n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1256 (9th Cir. 2020) (if a plaintiff carries its initial burden, “the [defendant] must come forward with evidence of the restraint’s procompetitive effects”) (quotation marks omitted), *cert. granted NCAA v. Alston*, No. 20-512, 2020 WL 7366281 (Dec. 16, 2020). A procompetitive justification is “a nonpretextual claim that [the defendant’s] conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal.” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020).
513. In cases involving two-sided transaction platforms, courts must consider procompetitive effects on both sides of the relevant market, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285–86 (2018), because effects that may appear anticompetitive on one side of a market may present no “net harm,” and may even be procompetitive, when both sides of the market are considered, *United States v. Am. Express Co.*, 838 F.3d 179, 206 (2d Cir. 2016), *aff’d*, 138 S. Ct. 2274.
514. Although Apple bears the burden in this context to show procompetitive business rationales, *see Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018), Apple has met its burden by offering a multitude of procompetitive justifications for the design of iOS and the licensing terms of the DPLA, all of which are supported by substantial evidence, *see supra* § III.B.i.d (¶¶ 299–317). Epic’s allegations of pretext fail for the reasons described above. *See supra* § III.B.i.e (¶¶ 318–27).

Epic Has Not Identified Adequate Less Restrictive Alternatives to Apple’s Policies³⁷

515. Once Apple has established procompetitive justifications for its policies and conduct, “the burden shifts back to [Epic] to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means.” *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018); *see also O’Bannon v. Nat’l Collegiate Athletic Ass’n*, 802 F.3d 1049, 1074 (9th Cir. 2015) (if the defendant shows a procompetitive rationale for the restraint, the burden shifts back to the plaintiff to demonstrate “substantially less restrictive alternatives to the [challenged restraints]”). “[T]o be viable . . . an alternative must be virtually as effective in serving the procompetitive purposes of the [challenged restraints], and without significantly increased cost.” *O’Bannon*, 802 F.3d at 1074 (quotation marks omitted).

³⁶ Procompetitive justifications are addressed in § 5.2.3, pages 30–31 of the Joint Elements Submission.

³⁷ Less restrictive alternatives are addressed in § 5.2.4, page 32 of the Joint Elements Submission.

516. “[C]ourts are not ‘free to micromanage organizational rules or to strike down largely beneficial market restraints.’” *In re Nat’l Collegiate Athletic Ass’n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1256 (9th Cir. 2020), *cert. granted NCAA v. Alston*, No. 20-512, 2020 WL 7366281 (Dec. 16, 2020). “[O]nly . . . where . . . a restraint is *patently and inexplicably* stricter than is necessary to accomplish all of its procompetitive objectives, an antitrust court can and should invalidate it and order it replaced with a less restrictive alternative.” *O’Bannon v. Nat’l Collegiate Athletic Ass’n*, 802 F.3d 1049, 1075 (9th Cir. 2015) (emphasis in original).
517. “[A] theoretically less restrictive alternative that is not realistic given business realities” does not suffice; “only alternatives that are practical in the business situation faced by” the defendant should be considered. U.S. Dep’t of Justice & Fed. Trade Comm’n, *Antitrust Guidelines for Collaborations Among Competitors* § 3.36(b) (2000); *see also M & H Tire Co. v. Hoosier Racing Tire Corp.*, 733 F.2d 973, 987 (1st Cir. 1984) (a plaintiff cannot rely on “possible less restrictive alternatives” that are “more hypothetical than practical”).
518. The “alternative” that Epic proposes is simply the ultimate relief it seeks in this case: A redesign of iOS to permit distribution of iOS apps other than through the App Store. Epic’s proffered alternative to Apple’s App Store policies would not sufficiently advance the procompetitive purposes behind Apple’s policies, and as such, must be rejected as a “less restrictive alternative.”
519. Epic’s alternative involves barring Apple from restricting in any way (whether technical, contractual, financial, or otherwise) the distribution of iOS apps through distribution channels other than the App Store. *See Remedies App’x A* at 3–5. This alternative is an inadequate replacement for iOS’s current design for at least two reasons.
520. *First*, the design of iOS enables Apple to receive a commission for its licensing of its intellectual property, whereas Epic’s alternative would encourage freeriding. One of the primary purposes of intellectual property law is to protect innovative assets, and accordingly, property holders enjoy the *exclusive right* to determine whether they want to license their technology to third-parties, and on what terms. This right is essential to prevent third-parties from free-riding on the results of expensive and risky research and development, encourage the creation of new goods and services, increase output, and improve product quality. FOF ¶ 601.
521. Apple has always protected its innovative technology and practices, expending considerable time and effort to obtain patents, trademarks, and copyrights, and to generate and protect trade secrets. FOF ¶¶ 89–89.4. Indeed, Apple has hundreds of patents and patent applications related to iOS and the App Store. *Id.* Although Apple is not *required* to do so, it has chosen to license some of this technology, under specific terms, to developers seeking to utilize that technology and develop apps for the App Store. Epic, as a licensee, has used this valuable intellectual property in the development, promotion, and distribution of *Fortnite* on iOS.
522. The “walled garden” design of iOS is part of what allows Apple to recoup its investment in its intellectual property and collect a royalty for the licensing of its intellectual property.

By allowing for distribution of apps only through the App Store, Apple can ensure that developers cannot freeride on Apple’s innovation, because it is through the App Store that Apple charges its commission (on paid downloads and in-app digital transactions). FOF ¶ 596. Under Epic’s model, however, developers could distribute iOS apps—and therefore benefit from Apple’s intellectual property—without going through the App Store and therefore evading the mechanism for paying a fee for the licensing of Apple’s intellectual property. Although Apple could still require that developers distributing iOS apps through other platforms pay a commission to Apple as a licensing fee, its ability to enforce and police that requirement would be severely limited.

523. Epic’s contention that free-riding cannot be a problem in this context because macOS, which does not use a “walled garden” business model, does not have similar free-riding problems is incorrect. iOS and macOS—as well as the Mac App Store—employ fundamentally different business models and are designed in fundamentally different ways. FOF ¶¶ 68–70; *see also supra* § III.B.i.b (¶ 50). For one thing, the Mac App Store was designed against a backdrop of settled expectations about how software would be distributed for macOS, and it was therefore commercially challenging for Apple to protect its intellectual property to the same extent it has done through iOS. FOF ¶ 72. But that Apple has managed to cope with a more open ecosystem for one platform does not mean that it would not be harmed if it were forced to license all of its intellectual property across all platforms on the same terms.
524. *Second*, Epic’s alternative would degrade security, privacy, and reliability. Allowing “sideloading”—that is, the distribution of apps directly onto a device without going through the App Store—would diminish security and reliability for users, who would no longer be guaranteed a safe and secure environment for downloading apps that actually work. FOF ¶¶ 73–73.2. This could also diminish consumer confidence in security, which could reduce consumer demand and thereby harm developers too. FOF ¶ 588. Consumers who use macOS understand and accept those risks in the context of a desktop computer, but may not want to accept those risks on a personal iOS device, which may contain sensitive and personal information. FOF ¶ 68.
525. Apple’s business judgment that it should install more rigorous and restrictive protections for information stored on iOS devices than on macOS devices is protected by law. Apple has implemented on iOS certain security measures—including the “walled garden”—that go beyond what it implemented for macOS. The question, for purposes of evaluating a less restrictive alternative, is not whether Apple could adopt a different business model (here, opting for a less secure device in exchange for permitting alternative transaction platforms) and still be profitable. Instead, the question is whether Apple could achieve the same *procompetitive efficiencies* (here, consumer security and privacy) through less restrictive means. *See Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). The evidence shows that the answer here is no: Even Epic’s experts admit that Apple’s curation of apps distributed through the App Store adds security.
526. The “stores within stores” model—that is, the distribution of apps through platforms other than the App Store—also would inhibit security. Such a model would directly interfere with Apple’s app review process, which is designed to make sure that the best apps rise to

the top. As Mr. Sweeney himself has recognized, apps distributed through alternative stores would not necessarily be reviewed by Apple, but instead might be reviewed by operators of third-party stores who lack the resources, expertise, or incentive to conduct the level of review and analysis of app submissions that Apple does. FOF ¶ 609

527. Crucially, Epic’s proposed relief appears to prohibit Apple from setting minimum guidelines or otherwise screening or reviewing alternative transaction platforms offered for distribution through the App Store (and apps distributed through those transaction platforms), even if those platforms contained harmful and offensive content. *See* Dkt. 276-1, Appendix A at 5. Epic’s relief thus seeks to prevent Apple from regulating or acting upon alternative transaction platforms in any way that would distinguish it. But one of Apple’s competitive advantages is that its products are not just safe, but *safer* than its competitors’ products, due in no small part to its high-quality app review process. FOF ¶ 607. The stores within stores model would, to a large extent, eliminate that advantage. FOF ¶ 610.
528. Epic’s argument that offering alternative transaction platforms would help increase demand for the App Store and thereby create value for Apple is wrong because it entirely ignores that independent transaction platforms would have different incentives and capabilities relative to protecting consumer security and privacy than Apple. And consumers could attribute any negative results of low-quality apps received through alternative transaction platforms, such as malware or data leaks, to Apple, directly degrading the value of Apple’s brand.
529. For these reasons, Epic’s proposed alternative is woefully lacking and would not be “virtually as effective” at ensuring that Apple’s procompetitive rationales for its policies are met. *O’Bannon v. Nat’l Collegiate Athletic Ass’n*, 802 F.3d 1049, 1074 (9th Cir. 2015) (quotation marks omitted). As a result, even if the Court reached step three of the rule of reason analysis, Epic would be unable to carry its burden, and its Section 1 claim would fail.

iii. Sherman Act Section 1 – Unreasonable Restraint of Trade in the “iOS In-App Payment Processing Market” (Epic Count 5)

530. In Count 5, Epic claims that Apple has unreasonably restrained trade in the “iOS In-App Payment Processing Market” by requiring developers to “use Apple’s In-App Purchase for in-app purchases of in-app content to the exclusion of any alternative solution or third-party payment processor.” Dkt. 1 ¶ 227.
531. This claim fails for substantially the same reasons that Count 3 fails.
532. *First*, as a threshold matter, Epic’s “concerted action” argument for this Count is identical to its concerted-action argument for Count 3, and cannot succeed for the reasons articulated *supra* § III.C.ii.a (¶¶ 490–502). An agreement is a required element of a Section 1 claim, and without one, Count 5 falls. *See Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).

533. *Second*, Epic could not prevail on Count 5 under the rule of reason analysis. For the rule of reason legal framework, *see supra* § III.C.ii.b (¶¶ 503–530).
534. At step one, for the reasons stated *supra* § III.B.ii.c (¶¶ 343–51), Epic has adduced no evidence showing that Apple’s IAP functionality has had any anticompetitive effects. At step two, once again for the reasons stated *supra* § III.B.ii.d (¶¶ 352–73), Apple has proffered several procompetitive justifications for the terms of the DPLA relating to IAP: IAP allows Apple to collect its commission seamlessly and is the means through which Apple collects a royalty for the use of its intellectual property; IAP provides a safe and secure means for consumers to execute transactions; IAP allows Apple to offer consumers a convenient way to execute and track transactions; and IAP provides benefits to developers by assisting them with currency conversion, conducting credit-worthiness checks, and generally increasing the value of the App Store.
535. At step three, Epic has identified no adequate less restrictive alternative for Apple’s use of IAP. The only alternative that Epic proposes is that Apple be barred from restricting or deterring in any way “the use of in-app payment processors other than IAP.” Remedies App’x at 6. This proposed alternative is deficient.
536. *First*, IAP is the method through which Apple collects its licensing fee from developers for the use of its intellectual property. FOF ¶ 680. Although Apple could still charge a commission on developers even without IAP, it would be difficult for Apple to police and collect that commission. FOF ¶ 701. Developers could thus potentially avoid the commission while benefitting from Apple’s innovation free of charge. As set forth above, *see supra* § III.B.ii.d (¶¶ 353–60), Apple is entitled to license its intellectual property for a fee, and to guard its intellectual property from uncompensated use by others. The requirement of usage of IAP accomplishes that aim, while Epic’s proposed alternative would undermine it.
537. *Second*, if Apple could no longer require developers to use IAP for digital transactions, then iOS users would be forced to navigate a fragmented payment landscape, in which they might be required to use payment solutions that lack the safety and security of IAP with no good cause. FOF ¶ 703.
538. *Third*, forcing consumers to use different payment solutions for each app would reduce the quality of the user experience and force iOS users to input payment information into multiple apps for digital transactions, rather than simply managing a single account through IAP. FOF ¶ 707. Not only would such an arrangement harm consumers, but it also would harm developers by weakening the value of the App Store as a whole.
539. To the extent Epic takes the position that its relief would bar Apple from receiving *any commission at all* on in-app purchases made using iOS, *see, e.g.*, Remedies App’x 7, such a remedy is inconsistent with prevailing intellectual property law, Epic’s alternative would thus be legally impermissible, and would not serve the procompetitive purposes of Apple’s current policies and practices. *See O’Bannon v. Nat’l Collegiate Athletic Ass’n*, 802 F.3d 1049, 1074 (9th Cir. 2015).

540. For these reasons, Epic's Section 1 claim relating to IAP must be rejected.

D. Sherman Act Claims – Defenses

541. Regardless of whether Epic can otherwise prevail on its Sherman Act claims, Apple has set forth several defenses that preclude liability in whole or in part.

542. Apple has asserted 27 defenses. *See* Dkt. 66 at 36–41. Some of those defenses are addressed in detail below, whereas others relate to substantive elements of Epic's claims and therefore are addressed elsewhere. An overview of each defense is set forth below.

542.1 *Failure to State a Cause of Action*: The insufficiency of Epic's allegations is discussed above with respect to each cause of action.

542.2 *Legitimate Business Justification*: With the exception of a *per se* tying claim (as to which legitimate business justification is an affirmative defense), anticompetitive effect is a substantive element of Epic's claims on which Epic bears the ultimate burden. Apple's procompetitive justifications for its conduct are addressed at § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–67).

542.3 *No Injury or Threatened Injury*: Injury or threatened injury is a substantive element of Epic's claims on which Epic bears the ultimate burden. The absence of injury or threatened injury to Epic is addressed at § III.A.iii (¶¶ 183–86).

542.4 *No Entitlement to Injunctive Relief*: Epic's entitlement to injunctive relief is a substantive element of Epic's prayer for relief on which Epic bears the ultimate burden. Specific equitable defenses (e.g., unclean hands) are addressed elsewhere. Epic's entitlement to injunctive relief is dependent upon its prevailing on liability, and is addressed specifically at § V.B. (¶¶ 637–734).

542.5 *Causation*: Causation is a substantive element of Epic's claims on which Epic bears the ultimate burden. Causation is addressed at § III.A.iii (¶¶ 183–86).

542.6 *Foreign Trade Antitrust Improvements Act (FTAIA)*: The FTAIA is a limitation on the scope of the Sherman Act, under which Epic bears the burden of showing an exception. The FTAIA is addressed at § III.A.iv (¶¶ 187–96).

542.7 *Doctrine of International Comity*: International comity is a limitation on the scope of the Sherman Act. International comity is addressed at § III.A.iv (¶¶ 197–200).

542.8 *Ratification, Agreement, Acquiescence, Consent*: Ratification, agreement, acquiescence, and consent are alternative formulations of waiver and estoppel, and are addressed at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).

542.9 *Statute of Limitations*: Statute of limitations is addressed at § III.D.iii (¶¶ 561–71), § IV.C.ii (¶ 631–33).

- 542.10 *Lack of Standing*: Standing is a threshold requirement of Epic’s claims on which Epic bears the ultimate burden. Standing is addressed at § III.A.iii (¶¶ 183–86).
- 542.11 *Failure to Join Indispensable Party*: Failure to join an indispensable party is addressed below at § III.D.i (¶¶ 544–53).
- 542.12 *Due Process*: Epic’s proposed injunction, if entered, would constitute a government-sanctioned invasion or taking of Apple’s property rights without just compensation, in violation of the Due Process Clause and the Takings Clause. Due process is addressed at § V.B.iii.c (¶ 685).
- 542.13 *Indemnity*: Indemnity is a substantive claim for relief on which Apple bears the ultimate burden. Indemnity is addressed at § VI.D (¶¶ 768–77), § VII.D (¶¶ 840–44).
- 542.14 *Protected Rights – Noerr-Pennington*: The *Noerr-Pennington* doctrine is addressed below at § III.D.iv (¶¶ 578–82).
- 542.15 *Protected Rights – Intellectual Property & Other Statutes*: Apple’s rights protected by federal and state intellectual property laws are relevant to Epic’s claims and are discussed throughout. Federal patent and copyright laws are *in pari materia* with the antitrust laws and the latter may not be construed or applied in a way that diminishes or trenches upon the former. *See Simpson v. Union Oil Co. of Cal.*, 377 U.S. 13, 24 (1964). Intellectual property rights are discussed throughout, and are addressed specifically at § III.B.i.b (¶¶ 256–62, 274–83).
- 542.16 *Protected Rights – Contract*: Apple’s rights protected by contract are discussed throughout, and are addressed specifically at § III.B.i.b (¶¶ 249–55).
- 542.17 *Laches*: Laches is addressed below at § III.D.iii. (¶¶ 561–77), § IV.C.ii (¶¶ 631–33).
- 542.18 *Waiver*: Waiver is addressed below at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).
- 542.19 *Estoppel*: Estoppel is addressed below at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).
- 542.20 *Unclean Hands*: The doctrine of unclean hands is addressed at § V.B.iii.e (¶¶ 693–700).
- 542.21 *Non-justiciability*: The inappropriateness of asking a federal court to dictate a specific business model for a competitor is addressed at § V.B.i (¶¶ 646–53), § V.B.iv (¶¶ 703–11).
- 542.22 *Not Unlawful, Unfair, or Fraudulent*: Unlawful, unfair, or fraudulent conduct is a substantive element of Epic’s claims on which Epic bears the ultimate burden. Unlawful, unfair, or fraudulent conduct is addressed at § IV.B (¶¶ 601–26).

542.23 *Waiver of Damages*: Epic has affirmatively, unequivocally, and irrevocably waived any claim for damages. Separate discussion of this defense is not necessary at this time.³⁸

542.24 *Election of Remedies*: Separate discussion of this defense is not necessary at this time, however, Epic’s election to pursue only injunctive relief is relevant to the issues of irreparable harm and adequate remedies at law, which are addressed at §§ V.B.iii.a–V.B.iii.b (¶¶ 669–82).³⁹

542.25 *Effective Opt-Out*: Epic has opted out from *Cameron v. Apple Inc.*, No. 19-3074 (N.D. Cal.), and therefore may not benefit from any judgment in that class action irrespective of the outcome of this suit. Separate discussion of this defense is not necessary at this time.⁴⁰

542.26 *No Entitlement to Interest, Attorney’s Fees, or Costs*: Epic’s entitlement to interest, attorneys’ fees, and costs is a substantive element of its claims on which Epic bears the ultimate burden. Separate discussion of this issue is not necessary at this time.⁴¹

i. Failure to Join an Indispensable Party (All Epic Counts)⁴²

543. Federal Rule of Civil Procedure 19 “establishes two broad categories of required parties.” *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015).

544. *First*, a party is “required” if, “in that person’s absence, the court cannot accord complete relief among existing parties.” *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015) (quoting Fed. R. Civ. P. 19(a)(1)(A)). “[T]he equitable relief sought in an action may make an absent party required.” *Id.* at 1049. For instance, “all parties who may be affected by a suit to set aside a contract must be present.” *Northrop Corp. v. McDonnell Douglas Corp.*, 705 F.2d 1030, 1044 (9th Cir. 1983).

545. *Second*, a “party is required if: that person claims an interest relating to the subject of the action and is so situated that disposing of the action in the person’s absence may: (i) as a practical matter impair or impede the person’s ability to protect the interest; or (ii) leave an existing party subject to a substantial risk of incurring double, multiple, or otherwise

³⁸ Apple reserve the right to assert this defense if Epic attempts to alter its prayer for relief to include damages.

³⁹ Apple reserves the right to assert this defense if Epic attempts to alter its prayer for relief to include damages.

⁴⁰ Apple reserves the right to assert this defense if Epic attempts to benefit from any relief issued in *Cameron v. Apple Inc.*, No. 19-3074 (N.D. Cal.).

⁴¹ Apple reserves the right to assert this issue if Epic prevails on its claims and seeks interest, attorneys’ fees, and/or costs.

⁴² Failure to join an indispensable party is addressed in § 17.1, page 122 of the Joint Elements Submission.

inconsistent obligations because of the interest.” *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015) (quoting Fed. R. Civ. P. 19(a)(1)(B)). The party asserting the absence of a necessary party bears the burden of persuasion. *Makah Indian Tribe v. Verity*, 910 F.2d 555, 558 (9th Cir. 1990).

546. Epic International is a necessary party to this litigation because Epic has sought (and preliminarily obtained) equitable relief inuring to the benefit of Epic International.
547. At the preliminary injunction stage, Epic sought relief restraining Apple “from taking any adverse action against Epic, including but not limited to restricting, suspending, or terminating any other Apple Developer Program account of Epic *or its affiliates*.” Dkt. 61-36 at 3 (emphasis added). Epic sought that relief because Epic International, not Epic, is the signatory for the account associated with Unreal Engine. FOF ¶ 250. The Court granted that portion of the relief, and expressly included Epic International within the scope of that relief. *See* Dkt. 118 at 3, 38. Now, in its request for permanent relief, Epic requests “that the Court permanently enjoin Apple from taking any retaliatory actions against Epic *or any of its affiliates* in connection with or based on Epic’s filing of this Action, the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option.” Dkt. 276-1, Appendix A at 7 (emphasis added).
548. Epic International could have, but did not, join Epic as a plaintiff in this action, and having elected not to do so, it cannot benefit from the relief that Epic requests. That is particularly true because the effect of the relief Epic seeks would be to set aside the DPLA (or at least those terms of the DPLA with which Epic disagrees) and preclude Apple from enforcing its rights under the contract. But “all parties who may be affected by a suit to set aside a contract must be present.” *Northrop Corp. v. McDonnell Douglas Corp.*, 705 F.2d 1030, 1044 (9th Cir. 1983). Apple’s contract with Epic International may not be set aside, in whole or in part, if Epic International is not a party to the case.
549. Importantly, Apple pleaded this affirmative defense in its Answer to the Complaint, Dkt. 66 at 38, and pointed out in the hearing on the temporary restraining order that Epic International “is an independent corporation” that “isn’t represented here,” and for which “no filings have been made.” Hr’g Tr. 31:2–9 (Aug. 24, 2020). Yet Epic has never sought leave to amend its Complaint to add Epic International as a party, and in fact represented to the Court that it would *not* be amending its Complaint. *See* Hr’g Tr. 8:14 (Sept. 28, 2020). Epic may not now seek to belatedly amend its Complaint to cure a defect of which it has been aware for months.
550. Because Epic International is not a party to the case, the Court cannot award Epic International any relief with respect to its developer account or the Unreal Engine. Unreal Engine is not distributed, owed, or licensed by Epic—the actual plaintiff in this litigation—but rather is licensed by Epic International. While the two companies are related, “it is long settled as a matter of American corporate law that separately incorporated organizations are separate legal units with distinct legal rights and obligations.” *Agency for Int’l Dev. v. Alliance for Open Soc’y Int’l, Inc.*, 140 S. Ct. 2082, 2087 (2020). The Court therefore may not enjoin Apple from terminating Epic International’s developer account.

551. Awarding Epic International relief in a case in which it is not a plaintiff would also be inequitable. Epic International, as a non-party, would not be bound by any judgment in this case adverse to Epic. *See Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 329 (1971). Epic thus cannot rely on Epic International and its products and services to prove its own claims—if Epic International has claims, it must assert them in its own name.
552. Thus, to the extent Epic seeks to rely on Epic International’s products or services, or its contractual relationship with Apple, or the purported harm to Epic International as a basis for injunctive relief, Epic International is an indispensable party, and pursuant to Rule 19, such contentions must be dismissed. The same is true for any other Epic subsidiary or affiliate—the only plaintiff in this case is Epic Games, Inc.

ii. Waiver and Estoppel (Epic Counts 1–6)⁴³

553. Even if Epic could otherwise prevail on its Sherman Act claims, its claims are foreclosed by the defenses of waiver and estoppel.
554. “[W]aiver is the intentional relinquishment or abandonment of a known right.” *Honcharov v. Barr*, 924 F.3d 1293, 1295 n.1 (9th Cir. 2019) (quotation marks omitted).
555. To establish an equitable estoppel defense, a plaintiff must prove that “(1) [the defendant] was aware of the true facts; (2) [the defendant] intended its representation to be acted on or acted such that the plaintiff[] had a right to believe it so intended; (3) the plaintiff[] was ignorant of the true facts; and (4) the plaintiff[] relied on [the defendant’s] representation to [its] detriment.” *Acri v. Int’l Ass’n of Machinists & Aerospace Workers*, 781 F.2d 1393, 1398 (9th Cir. 1986).
556. When contractual considerations are implicated, equitable estoppel “precludes a party from claiming the benefits of a contract while simultaneously attempting to avoid the burdens that contract imposes.” *Comer v. Micor, Inc.*, 436 F.3d 1098, 1101 (9th Cir. 2006) (quotation marks omitted). Thus, a court may “refuse to exercise” its jurisdiction over equitable claims

[w]hen a party, with full knowledge, or at least with sufficient notice or means of his knowledge, of his rights, and of all the material facts, freely does what amounts to a recognition of the transaction as existing, or acts in a manner inconsistent with its repudiation, or lies by for a considerable time, and knowingly permits the other party to deal with the subject-matter under the belief that the transaction has been recognized, or freely abstains for a considerable length of time from impeaching it, so that the other party is thereby reasonably induced to suppose that it is recognized.

⁴³ Waiver and estoppel are addressed in §§ 17.2–17.3, pages 123–24 of the Joint Elements Submission.

Simmons v. Burlington, C.R. & N.R. Co., 159 U.S. 278, 291 (1895) (quotation marks omitted); *see also United States v. Ga.-Pac. Co.*, 421 F.2d 92, 96 (9th Cir. 1970) (equitable estoppel “absolutely preclud[es]” claims “both at law and equity”).

557. Before instituting this lawsuit, Epic had been operating pursuant to the terms of the DPLA for ten years. FOF ¶ 252. During that time, Epic reaped the benefits of its relationship with Apple—it developed its apps for compatibility with iOS using Apple’s SDKs, distributed *Fortnite* to over 100 million iOS users through the App Store (to say nothing of the other games Epic distributed through the App Store to iOS users), and took in over \$700 million in revenue from *Fortnite* alone through iOS. FOF ¶ 264. In all of that time—while it was building its brand on the back of Apple’s customer base and proprietary intellectual property—it never contended that it was not required to abide by the terms of the DPLA because of any purported antitrust concerns. In fact, Epic renewed its DPLA with Apple on June 30, 2020—the very same day it sent a letter to Apple demanding a change in the longstanding terms of access. FOF ¶ 276. Less than two months later, Epic activated the “hotfix” and began bypassing IAP. FOF ¶¶ 298–300. Epic thus *knew* when it renewed its DPLA that it intended to breach it.
558. Epic’s lawsuit amounts to no more than an effort to avoid the consequences of the contract that it agreed to and abided by, despite reaping the benefits of its relationship with Apple for years. This is a bare attempt to “claim[] the benefits of a contract while simultaneously attempting to avoid the burdens that contract imposes.” *Comer v. Micor, Inc.*, 436 F.3d 1098, 1101 (9th Cir. 2006) (quotation marks omitted). Epic cannot claim that it did not previously have knowledge of the relevant facts giving rise to its antitrust claims, nor that its conduct prior to this dispute could be viewed as anything other than an acquiescence to the terms agreed to between it and Apple. The relevant contract provisions have not changed in the intervening years. FOF ¶ 396. And Apple relied on that acquiescence to permit Epic access to its intellectual property, and to help Epic reach more consumers and offer more content.
559. Thus, even if Epic could otherwise prevail on its Sherman Act claims, its request for relief is barred by the doctrines of waiver and estoppel.

iii. Limitations on Actions (Epic Counts 1–6)⁴⁴

560. Epic’s Sherman Act claims are also barred as untimely pursuant to the doctrine of laches.

a. Four-Year Limitations Period

561. Although the statute of limitations on damages claim under Section 4 of the Clayton Act is four years, there is no statute of limitations for injunctive-relief claims under Section 16 of the Clayton Act. *See Oliver v. SD-3C LLC*, 751 F.3d 1081, 1085 (9th Cir. 2014). Such claims are, however, “subject to the equitable defense of laches.” *Id.*

⁴⁴ Limitations on actions are addressed in § 17.4, pages 125–26 of the Joint Elements Submission.

562. “Laches is an equitable defense that prevents a plaintiff, who with full knowledge of the facts, acquiesces in a transaction and sleeps upon his rights” from obtaining equitable relief. *Danjaq LLC v. Sony Corp.*, 263 F.3d 942, 950–51 (9th Cir. 2001) (quotation marks omitted). To compute the laches period for Sherman Act claims that pursue equitable relief under the Clayton Act, courts use Section 4B’s four-year statute of limitations as a guideline. *See Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014).
563. A cause of action in antitrust ordinarily “accrues each time a plaintiff is injured by an act of the defendant and the statute of limitations runs from the commission of the act.” *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (alteration and quotation marks omitted).
564. Application of the presumptive four-year limitation renders Epic’s Sherman Act claims untimely. Epic first entered into the DPLA in 2010. FOF ¶ 252. It has asserted no material change in the terms of that agreement or in Apple’s business design since then that would give rise to an antitrust claim that it could not have asserted in 2010. Accordingly, if Epic had a viable claim now, it would have had the same claim when it first agreed to the DPLA and joined the App Store in 2010, and it would have had four years to bring suit on that claim. Instead of asserting a claim then, it waited (and profited from its relationship with Apple) until 2020 to file this suit, well outside the presumptive four-year limitations period for Section 16 claims.

b. Exceptions to the Four-Year Limitations Period

565. Although claims for injunctive relief under the Clayton Act generally cannot be brought more than four years after the challenged anticompetitive conduct, “there are recognized exceptions to this general rule.” *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014).
566. *First*, “in the context of a continuing conspiracy to violate the antitrust laws, each time a plaintiff is injured by an act of the defendant[,] a cause of action accrues to him to recover the damages caused by that act.” *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (alterations and quotation marks omitted). Under this exception, “[i]n order to restart the statute of limitations, there must be a new overt act that: (1) is new and independent and not merely a reaffirmation of a previous act, and (2) inflicts new and accumulating injury on the plaintiff.” *Id.* (alterations and quotation marks omitted). This “continuing violation” exception means that “each time a defendant sells its price-fixed product, the sale constitutes a new overt act causing injury to the purchaser and the statute of limitations runs from the date of the act.” *Id.* “However, the mere fact that [a party] receive[s] a benefit today as a result of [previous alleged anticompetitive conduct] is not enough to restart the statute of limitations.” *Aurora Enters., Inc. v. Nat’l Broad. Co.*, 688 F.2d 689, 694 (9th Cir. 1982).
567. *Second*, “the limitations period may start to run after the defendant’s initial violation of the antitrust law, if it is ‘uncertain’ or ‘speculative’ whether the defendants’ antitrust violation has injured the plaintiff at the time of the violation.” *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (quotation marks omitted).

568. The continuing violation doctrine does not apply here. There have been no new “overt acts” since 2010 giving rise to an antitrust claim—Apple’s policies and procedures regarding the App Store have remained unchanged in relevant part during that entire time period. In fact, Apple has introduced numerous *reductions* to what had been a flat 30% commission rate, dispelling any notion of additional anticompetitive conduct in the intervening years. FOF ¶¶ 159–176.
569. The fact that Apple continues to curate iOS apps and continues to collect its commission through IAP is not sufficient to invoke the continuing violation doctrine. The continuing violation doctrine does not apply simply because allegedly anticompetitive conduct predating the limitations period continues into the limitations period—there must be a new “overt act” within the limitations period. *See In re Animation Workers Antitrust Litig.*, 87 F. Supp. 3d 1195, 1212–13 (N.D. Cal. 2015) (holding insufficient the allegation that an agreement not to poach competitors’ employees depressed employees’ salaries into the limitations period); *Ryan v. Microsoft Corp.*, No. 14-CV-4634, 2015 WL 1738352, at *13–14 (N.D. Cal. Apr. 10, 2015) (same). Likewise, “the passive receipt of profits from an illegal contract by an antitrust defendant is not an overt act of enforcement which will restart the statute of limitations.” *Eichman v. Fotomat Corp.*, 880 F.2d 149, 160 (9th Cir. 1989). The contractual and technical restrictions of which Epic complains were put in place long ago and have never been materially altered. Epic’s allegation that those same restrictions remain in place today is not enough to establish a new “overt act” within the limitations period.
570. Nor can Epic qualify under the exception for uncertain injury. To the extent Epic can be said to have suffered injury at all, any injury today is the same as it would have been in 2010, namely, that Epic purportedly cannot open up its own competing app stores for iOS apps or use its own payment processing service. When asked at trial, Mr. Sweeney had no satisfactory explanation for why Epic waited until 2020 to sue, saying simply that it “took [him] a very long time to come to a realization of all the negative impacts of Apple’s policy.” Trial Tr. 90:23–12 (Sweeney). The continuing violation doctrine does not apply.

c. Equitable Bar

571. In addition to provide a presumptive four-year period in which to bring Section 16 claims, the equitable doctrine of laches also operates to bar an otherwise timely suit in certain circumstances. As relevant here, laches “prevents a plaintiff, who with full knowledge of the facts, acquiesces in a transaction and sleeps upon his rights” from obtaining equitable relief. *Danjaq LLC v. Sony Corp.*, 263 F.3d 942, 950–51 (9th Cir. 2001) (quotation marks omitted).
572. In the antitrust context, the doctrine of laches is necessary, because without it, “a plaintiff under [Section] 16 could seriously interfere with a rival’s business operations, at a time of the plaintiff’s own choosing, yet the public would enjoy none of the safeguards of the public-interest standards and expertness which presumably guide the government when it is a plaintiff.” *Int’l Tel. & Tel. Corp. v. Gen. Tel. & Elec. Corp.*, 518 F.2d 913, 926–27 (9th Cir. 1975), *disapproved of on other grounds by California v. American Stores Co.*, 495 U.S. 271 (1990). The Ninth Circuit has thus indicated that Congress did not “intend[.]

in passing [Section] 16 of the Clayton Act, to permit potential plaintiffs to sleep through their competitors' antitrust violations and then sue many years later." *Id.* at 927. "The potential for economic disruption is so great that when placed in private hands it should be circumscribed by the requirement that injunction-seeking plaintiffs act with reasonable promptness unless excused by equitable considerations." *Id.*

573. This formulation of the doctrine of laches fits the circumstances here to a T. Epic has benefitted from its relationship with Apple for over ten years. Epic does not claim that the facts giving rise to its Sherman Act claims have materially changed in the preceding years, or that it could not have brought this suit before it did. Instead, it "sle[pt] on its rights," building its brand through Apple's intellectual property and inducing Apple to give it access to iOS and the millions of consumers who use it. Yet now, with its flagship game dying out (FOF ¶¶ 268–69), Epic must find a new way to compete. It initiated its "Project Liberty" campaign as a means of reducing the price for which it must pay for the use of Apple's intellectual property, and initiated this litigation under the pretense that it simply wants to aid competition, not to boost its own profit margins.
574. Equity disfavors such a strategy and will not reward opportunistic plaintiffs who fail to timely assert their rights, asserting paradigm-altering claims like those raised here only when it suits them. The "potential for economic disruption" here, were Epic permitted to obtain the injunctive relief it seeks, is substantial. *Int'l Tel. & Tel. Corp. v. Gen. Tel. & Elec. Corp.*, 518 F.2d 913, 927 (9th Cir. 1975), *disapproved of on other grounds by California v. American Stores Co.*, 495 U.S. 271 (1990). And it is made all the more substantial by the fact that Epic induced Apple to continue to make significant investments in the App Store (and, consequently, Epic's iOS-compatible products) for the past ten years.
575. Indeed, Epic's lawsuit does not appear to be motivated by the "discovery" of a heretofore unknowable "injury," but rather by a commercial desire to boost its revenue in the face of falling profits. FOF ¶¶ 268–69. Rather than simply bring an antitrust lawsuit, Epic first embarked on a calculated campaign to market itself as the people's hero. FOF ¶¶ 280–87. Through "Project Liberty," Epic implemented a surreptitious "hotfix" to bypass IAP and avoid the 30% commission rate that it had contractually agreed to in the DPLA. FOF ¶¶ 268–300. Epic's lawsuit was not spurred by a recognition of purported "injury," but rather is part of its public relations campaign. *See also* Trial Tr. 90:23–12 (Sweeney).
576. Thus, even if Epic's claims could be saved by the continuing violation doctrine, Epic failed to promptly assert its rights, and cannot now obtain the sweeping equitable relief it seeks.

iv. Noerr-Pennington Doctrine (All Epic Counts)

577. To the extent Epic's claims are premised on Apple's assertion of its contractual rights in this lawsuit, that aspect of Epic's claims is foreclosed by the *Noerr-Pennington* doctrine.
578. The *Noerr-Pennington* doctrine arises from the First Amendment right to "petition the Government for a redress of grievances," U.S. Const. amend. I, and insulates from antitrust scrutiny undertaken in furtherance of that constitutional right, *see United Mine Workers v.*

Pennington, 381 U.S. 657, 669–70 (1965); *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 137–38 (1961). “The doctrine extends to all three branches of government, and thus also exempts bringing a lawsuit—that is, petitioning a court—from antitrust liability.” *Freeman v. Lasky, Hass & Cohler*, 410 F.3d 1180, 1183 (9th Cir. 2005).

579. Apple has sought in this lawsuit a declaration that the Developer Agreement and the DPLA are enforceable, and that “Apple has the contractual right to terminate its Developer Agreement with any or all of Epic’s wholly owned subsidiaries, affiliates, and/or other entities under Epic’s control, including Epic International . . . , at any time and at Apple’s sole discretion.” Dkt. 66 at 63 ¶ 88.
580. Meanwhile, Epic has sought an “anti-retaliation” provision in its proposed injunctive relief that would “permanently enjoin Apple from taking any retaliatory actions against Epic or any of its affiliates in connection with . . . the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option.” Dkt. 276-1, Appendix A at 7.
581. To the extent Epic’s request for an “anti-retaliation” provision is based in whole or in part on Apple’s decision to enforce its rights under the Developer Agreement and the DPLA through the declaratory relief it seeks in this suit, such relief is barred by the *Noerr-Pennington* doctrine.⁴⁵

IV. EPIC’S STATE-LAW CLAIMS

A. Cartwright Act (Epic Counts 7–9)⁴⁶

582. Epic brings three claims under California’s Cartwright Act based on the same factual allegations as the three Sherman Act Section 1 claims.
- Count 7 (“Unreasonable Restraints of Trade in the iOS App Distribution Market” – Cartwright Act) corresponds to Count 3 (“Unreasonable Restraints of Trade in the iOS App Distribution Market” – Sherman Act § 1);
 - Count 8 (“Unreasonable Restraints of Trade in the iOS In-App Payment Processing Market” – Cartwright Act) corresponds to Count 5 (“Unreasonable Restraints of Trade in the iOS In-App Payment Processing Market” – Sherman Act § 1); and
 - Count 9 (“Tying in the App Store in the iOS App Distribution Market to In-App Purchase in the iOS In-App Payment Processing Market” – Cartwright Act) corresponds to Count 6 (“Tying in the App Store in the iOS App Distribution

⁴⁵ Apple reserves the right to further brief this defense depending on the arguments presented by Epic in its Proposed Conclusions of Law and at trial.

⁴⁶ The Cartwright Act is addressed in § 10, pages 84–87 of the Joint Elements Submission.

Market to In-App Purchase in the iOS In-App Payment Processing Market” – Sherman Act § 1).

583. The Cartwright Act makes “unlawful, against public policy and void” “every trust,” defined as “a combination of capital, skill, or acts by two or more persons . . . [t]o create or carry out restrictions in trade or commerce.” Cal. Bus. & Prof. Code §§ 16720, 16726.
584. Although “[i]nterpretations of federal antitrust law are at most instructive, not conclusive, when construing the Cartwright Act,” *Aryeh v. Canon Business Sols., Inc.*, 55 Cal. 4th 1185, 1195 (2013), where a plaintiff does not raise specific distinctions between the Cartwright Act and the Sherman Act, courts analyze federal and state claims together pursuant to federal antitrust law, *see, e.g., name.space, Inc. v. Internet Corp. for Assigned Names & Numbers*, 795 F.3d 1124, 1131 n.5 (9th Cir. 2015) (post-*Aryeh* decision concluding that “the analysis under the Cartwright Act . . . is identical to that under the Sherman Act”); *Jones v. Micron Tech. Inc.*, 400 F. Supp. 3d 897, 922 (N.D. Cal. 2019) (treating Cartwright Act claims as coextensive with the Sherman Act where the parties identified no material differences); *Samsung Elec. Co., Ltd. v. Panasonic Corp.*, No. 10-CV-308, 2015 WL 10890655, at *8 (N.D. Cal. Sept. 30, 2015) (same).
585. Epic has not identified any differences between the Cartwright Act and the Sherman Act that would allow it to prevail on its Cartwright Act claims even if its Sherman Act claims fail. It points to language in California cases stating that “[t]he Cartwright Act is broader in range and deeper in reach than the Sherman Act,” *In re Cipro Cases I & II*, 61 Cal. 4th 116, 161 (2015) (quotation marks omitted), but does not explain what specific differences there are that would bear on this case. For instance, *Cianci v. Superior Court*, 40 Cal. 3d 903 (1985), on which Epic relies, addressed the question whether the Cartwright Act applies to the medical profession. *Id.* at 916. It did not expand the Cartwright Act in a way that would affect the claim asserted here.
586. Accordingly, if Epic’s Sherman Act claims fail (as they must), then Epic’s Cartwright Act claims likewise fail.

i. Epic’s Cartwright Act Claims Fail for Lack of Concerted Action

587. Even to the extent the Cartwright Act may differ in some ways from the Sherman Act, Epic’s claims under the Cartwright Act fail for lack of concerted action. Although Epic’s Section 1 Sherman Act claims also fail for lack of concerted action, California law imposes a higher bar for concerted action that Epic cannot overcome even if it otherwise prevails on its Section 1 Sherman Act claims.
588. Epic’s Cartwright Act claims fail because they challenge only unilateral conduct. The Cartwright Act applies only to an unlawful “combination of capital, skill or acts by two more persons.” Cal. Bus. & Prof. Code § 16720. The court in *In re Qualcomm Antitrust Litigation* recognized that “the [Cartwright] Act does not cover ‘wrongful conduct on the part of a single entity.’” 292 F. Supp. 3d 948, 974 (N.D. Cal. 2017) (citation omitted).
589. Here, all of Epic’s Cartwright Act claims must fail because the Cartwright Act does not impose liability for “wrongful conduct on the part of a single entity.” *Bondi v. Jewels by*

Edwar, Ltd., 267 Cal. App. 2d 672, 678 (1968). The Cartwright Act, by its express terms, requires a “combination.” Cal. Bus. & Prof. Code § 16720.

590. Epic challenges only unilateral conduct by Apple, namely the design and policies related to the App Store, iOS, and IAP. That is not enough to make out a Cartwright Act. *See In re Apple iPod iTunes Anti-Trust Litig.*, No. 05-CV-00037, 2010 WL 2629907, at *5 (N.D. Cal. 2010) (holding “a claim that fails to allege any combination is not cognizable under the Cartwright Act”).
591. Epic is incorrect in asserting that the “combination” element of a Cartwright Act claim can be shown “where a supplier or producer, by coercive conduct, imposes restraints to which distributors involuntarily adhere,” quoting *In re Qualcomm Antitrust Litigation*, 292 F. Supp. 3d 948, 974 (N.D. Cal. 2017) (citation omitted). The “coercive conduct” mentioned in that case refers to concerted action cognizable only under Section 1 of the Sherman Act—a statute which itself requires an agreement between parties. *See id.* (quoting *Kolling v. Dow Jones & Co.*, 137 Cal. App. 3d 709, 720 (1982)). And in *Kolling*, the court made clear that “[i]f a seller does no more than announce a policy designed to restrain trade, and declines to sell to those who fail to adhere to the policy, no illegal combination is established,” and that an illegal combination is formed only when “a supplier secures compliance with announced policies in restraint of trade by means which go beyond mere announcement of policy and the refusal to deal.” 137 Cal. App. 3d at 721. A plaintiff must therefore show that the retailer “was coerced into adhering to [the supplier’s] policy or that [it] acquiesced in it.” *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986), *opinion modified on denial of reh’g*, 810 F.2d 1517 (9th Cir. 1987); *see Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1357, n.4 (9th Cir. 1976) (“No violation is made out unless plaintiff can show that the supplier’s conduct rose to the level of coercion sufficient to deprive the dealers of their free choice.”). There is no such evidence or allegations here.
592. For the same reason, Epic cannot rely on a monopoly maintenance theory of liability in its Cartwright Act claims. There is no analog in the statute to the Sherman Act’s prohibition on unilateral monopolistic conduct; the Cartwright Act “does not have any parallel to Sherman Act section 2’s anti-monopoly provisions.” *Freeman v. San Diego Ass’n of Realtors*, 77 Cal. App. 4th 171, 200 n.32 (1999); *see also Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986) (“This [monopoly] claim is not cognizable under the Cartwright Act, for it fails to allege any combination.”), *opinion modified on denial of reh’g*, 810 F.2d 1517 (9th Cir. 1987).
593. The Cartwright Act does not target unilateral conduct in maintenance of a monopoly, and in the absence of concerted action, Epic cannot prevail on its Cartwright Act claims under any theory of liability.
 - ii. **Epic’s Cartwright Act Tying Claim Must Be Analyzed Under Section 16720 (Epic Count 9)**
594. Epic’s claim under the Cartwright Act for unlawful tying fails for all of the reasons its Sherman Act Section 1 tying claim fails. *See supra* § III.C.i (¶¶ 423–86).

595. A tying claim under the Cartwright Act may be asserted under Section 16720 of the Cartwright Act. If a plaintiff pursues a *per se* tying claim under Section 16720, the plaintiff must show: (1) “a tying agreement, arrangement or condition existed whereby the sale of the tying product was linked to the sale of the tied product or service”; (2) “the party had sufficient economic power in the tying market to coerce the purchase of the tied product”; (3) “a substantial amount of sale was affected in the tied product”; and (4) “the complaining party sustained pecuniary loss as a consequence of the unlawful act.” *Morrison v. Viacom, Inc.*, 66 Cal. App. 4th 534, 541–42 (1998). These elements generally track that of a tying claim under Section 1 of the Sherman Act, *see supra* § III.C.i.a (¶¶ 426–30), and thus if Epic’s Sherman Act tying claim fails (as it does), so too does its tying claim under Section 16720 of the Cartwright Act.
596. Alternatively, a plaintiff may pursue a tying claim under Section 16727 of the Cartwright Act, which provides that “[i]t shall be unlawful for any person to lease or make a sale or contract for the sale of goods, merchandise, machinery, supplies, commodities for use within the State . . . on the condition, agreement or understanding that the lessee or purchaser thereof shall not use or deal in the goods, merchandise, machinery, supplies, commodities, or services of a competitor or competitors of the lessor or seller.” Cal. Bus. & Prof. Code § 16727. If a plaintiff pursues a *per se* tying claim under Section 16727, it may prevail if it shows *either* element (2) *or* (3) of a Section 16720 tying claim, along with elements (1) and (4).
597. Section 16727 of the Cartwright Act does not apply when the tying product is a service, as opposed to a good. On its face, the statute includes “services” among the possible tied products, but excludes “services” when setting forth the possible tying product. *See* Cal. Bus. & Prof. Code § 16727. Courts have accordingly rejected tying claims under Section 16727 where the alleged tying product is an intangible right or service instead of a tangible good. *See, e.g., Morrison v. Viacom, Inc.*, 66 Cal. App. 4th 534, 548 (1998) (dismissing tying claim under Section 16727 because the statute “does not apply when the tying product is a service”); *Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1032–34 (N.D. Cal. 2015) (concluding that alleged tying product must be a tangible good); *Tele Atlas N.V. v. Navteq Corp.*, 397 F. Supp. 2d 1184, 1192 (N.D. Cal. 2005) (similar).
598. Epic cannot take advantage of the standard for liability set forth in Section 16727 of the Cartwright Act regarding unlawful tying, because the alleged tying product here—“iOS app distribution”—is not a tangible good. Epic therefore can only prevail, if at all, under the Section 16720 standard for a *per se* tying claim.
599. Because, as set forth above, Epic’s tying claim under Section 1 of the Sherman Act fails, *see supra* § III.C.i (¶¶ 423–86), and its tying claim under the analogous Section 16720 framework must also fail.

B. California Unfair Competition Law (Epic Count 10)⁴⁷

⁴⁷ The elements of the California Unfair Competition Law are addressed in § 11, page 88 of the Joint Elements Submission.

600. Epic brings a claim under the California Unfair Competition Law (“UCL”), claiming that it “was unreasonably prevented from freely distributing mobile apps or its in-app payment processing tool.” Dkt. 1 ¶ 290. (Epic does not challenge the anti-steering provisions in its UCL cause of action.) Epic claims that Apple’s conduct is both “unlawful” and “unfair” under the Unfair Competition Law. *Id.* ¶¶ 288, 289.
601. The UCL prohibits business practices that constitute “unfair competition,” which is defined, in relevant part, as “any unlawful, unfair or fraudulent business act or practice.” Cal. Bus. & Prof. Code § 17200. Claims under the UCL are available to both business competitor and consumer plaintiffs. *Cel-Tech Commc’ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 186–87 & n.12 (1999).
602. To bring a claim under the UCL, a plaintiff must “(1) establish a loss or deprivation of money or property sufficient to quantify as injury in fact, i.e., *economic injury*, and (2) show that the economic injury was the result of, i.e., *caused by*, the unfair business practice.” *Kwikset Corp. v. Super. Ct.*, 51 Cal. 4th 310, 322 (2011) (emphases in original); *see also* Cal. Bus. & Prof. Code § 17204. The injury-in-fact requirement “incorporate[s] the established federal meaning” for “federal standing under article III.” *Kwikset Corp.*, 51 Cal. 4th at 322, 324. A plaintiff therefore must show it (1) suffered an actual, or will suffer an imminent, concrete and particularized injury; (2) that this injury is fairly traceable to the defendant; and (3) that the injury is redressable. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–561 (1992).
603. The UCL’s money-or-property requirement demands “some form of economic injury.” *Kwikset Corp. v. Super. Ct.*, 51 Cal. 4th 310, 323 (2011). This “requirement is more difficult to satisfy than that of injury in fact.” *Id.* at 325. The California Supreme Court has identified at least four ways through “which economic injury from unfair competition may be shown.” *Id.* at 323. “A plaintiff may (1) surrender in a transaction more, or acquire in a transaction less, than he or she otherwise would have; (2) have a present or future property interest diminished; (3) be deprived of money or property to which he or she has a cognizable claim; or (4) be required to enter into a transaction, costing money or property, that would otherwise have been unnecessary.” *Id.*
604. The statutory phrase “as a result of,” Cal. Bus. & Prof. Code § 17204, is given “its plain and ordinary” meaning, “requir[ing] a showing of a causal connection.” *Kwikset Corp. v. Super. Ct.*, 51 Cal. 4th 310, 326 (2011). To satisfy this requirement, the alleged injury must derive from the defendant’s conduct, not the plaintiff’s own decision. *Hall v. Time Inc.*, 158 Cal. App. 4th 847, 857 (2008).

i. Apple’s Conduct Is Not Unlawful⁴⁸

605. Epic cannot proceed under the unlawful prong of the UCL because the same conduct is alleged to support Epic’s federal antitrust claims *and* its UCL claim, and Epic’s federal antitrust claims fail.

⁴⁸ The unlawful prong of the UCL is addressed in § 11.2, page 90 of the Joint Elements Submission.

606. Under the unlawful prong, the UCL “permits violations of other laws to be treated as unfair competition that is independently actionable.” *AngioScore, Inc. v. TriReme Med., LLC*, 70 F. Supp. 3d 951, 961 (N.D. Cal. 2014); *see also Cel-Tech Commc’ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 180 (1999) (“By proscribing ‘any unlawful’ business practice, section 17200 borrows violations of other laws and treats them as unlawful practices.”). The law covers any conduct that “can properly be called a business practice and that at the same time is forbidden by law.” *Korea Supply Co. v. Lockheed Martin Corp.*, 29 Cal. 4th 1134, 1143 (2003). “Virtually any law—federal, state or local—can serve as a predicate for an action under Business and Professions Code section 17200.” *Durell v. Sharp Healthcare*, 183 Cal. App. 4th 1350, 1361 (2010).
607. The parties agree that under the unlawful prong, Epic’s UCL claim rises and falls with its Sherman Act and Cartwright Act claims. *See, e.g., Cascades Computer Innovation LLC v. RPX Corp.*, No. 12-CV-01143 YGR, 2013 WL 316023, at *15 (N.D. Cal. 2013); *Datel Holdings Ltd. v. Microsoft Corp.*, 712 F. Supp. 2d 974, 999 (N.D. Cal. 2010).
608. Because Apple’s conduct does not violate either the Sherman Act or the Cartwright Act, Epic’s claim under the UCL’s unlawful prong fails.

ii. Apple’s Conduct Is Not Unfair⁴⁹

609. Epic’s UCL claim also fails under the unfairness prong. Again, because Epic challenges the same conduct in its federal antitrust claims and UCL claim, the Court’s conclusion that Apple’s conduct is not an antitrust violation also precludes a finding of unfair competition.
610. California courts “do not hold that in all circumstances an ‘unfair’ business act or practice must violate an antitrust law to be actionable under the unfair competition law,” but “conduct alleged to be ‘unfair’ because it unreasonably restrains competition and harms consumers . . . is not ‘unfair’ if the conduct is deemed reasonable and condoned under the antitrust laws.” *Chavez v. Whirlpool Corp.*, 93 Cal. App. 4th 363, 375 (2001). If “the same conduct is alleged to support both a plaintiff’s federal antitrust claims and state-law unfair competition claim, a finding that the conduct is not an antitrust violation precludes a finding of unfair competition.” *LiveUniverse, Inc. v. MySpace, Inc.*, 304 F. App’x 554, 557 (9th Cir. 2008); *see also Chavez*, 93 Cal. App. 4th at 375 (“To permit a separate inquiry into essentially the same question under the unfair competition law would only invite conflict and uncertainty and could lead to the enjoining of procompetitive conduct.”); *Distance Learning Co. v. Maynard*, No. 19-CV-03801, 2020 WL 2995529, at *10 (N.D. Cal. June 4, 2020) (collecting cases).
611. While “a practice may be deemed unfair even if not specifically proscribed by some other law,” *Cel-Tech Commc’ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 187 (1999), that is not the case where, as here, the same conduct giving rise to the UCL claim also is the basis for a claim under the antitrust laws, *see LiveUniverse, Inc. v. MySpace, Inc.*, 304 F. App’x 554, 557 (9th Cir. 2008); *U.S. Colo, LLC v. CoreSite One Wilshire, LLC*, NO.

⁴⁹ The unfair prong of the UCL is addressed in §§ 11.3–11.3.2, pages 91–97 of the Joint Elements Submission.

14-CV-4044, 2014 WL 12689269, at *4 (C.D. Cal. July 31, 2014); *DocMagic, Inc. v. Ellie Mae, Inc.*, 745 F. Supp. 2d 1119, 1146–47 (N.D. Cal. 2010); *cf. Cent. Valley Med. Grp., Inc. v. Indep. Physician Assocs. Med. Grp., Inc.*, No. 19-CV-404, 2019 WL 3337891, at *4 (E.D. Cal. July 25, 2019) (distinguishing prior cases on the ground that in each, “the plaintiff either brought explicit antitrust claims or unfair competition claims based on underlying conduct that was *per se* lawful under the statute at issue”).

612. Because the same conduct is alleged to support both Epic’s federal antitrust claims *and* its state-law unfair competition claim, and Epic’s federal antitrust claims fail, Epic’s UCL claim based on “unfairness” must be rejected as well.
613. To the extent Epic’s UCL claim does not rise and fall with its antitrust claims, its UCL claim must be analyzed under the applicable test based on whether the plaintiff is a business competitor or a consumer plaintiff. *Cel-Tech Commc’ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 186–87 & n.12 (Cal. 1999).
614. The business competition standard, not the consumer standard, is applicable to Epic’s claim. Where, as here, “the crux of [the plaintiff’s] complaint is that [the defendant’s] conduct unfairly injures their economic interests,” the business competition standard applies. *Levitt v. Yelp! Inc.*, 765 F.3d 1123, 1136 (9th Cir. 2014); *Watson Labs., Inc. v. Rhone-Poulenc Rorer, Inc.*, 178 F. Supp. 2d 1099, 1117–18 (C.D. Cal. 2001) (viewing contractually obligated supplier and plaintiff as “ostensible competitor[s]”); *accord Advanced Thermal Scis. Corp. v. Applied Materials Inc.*, No. 07–CV-01384, 2009 WL 10671186, at *2 (C.D. Cal. Oct. 2, 2009) (applying business competition standard where plaintiff’s claim was that the defendant had “usurped its business opportunit[ies],” notwithstanding argument that plaintiff was a “consumer” of defendant’s products).
615. Epic alleges that Apple’s conduct has injured its economic interests. Its antitrust claims are premised principally on the assertion that but for the technical restrictions in iOS and the contractual restrictions of the DPLA, it could sell iOS apps through EGS in competition with the App Store. *See* Dkt. 1 ¶¶ 89–92. That is a quintessential business competition claim—Epic believes the terms of competition with Apple are unfair, and seeks to change them through this litigation.
616. Under the business competitor standard for the unfairness prong of the UCL, a plaintiff must show that the alleged conduct “threatens an incipient violation of an antitrust law, or violates the policy or spirit of one of those laws because its effects are comparable to or the same as a violation of the law, or otherwise significantly threatens or harms competition.” *Cel-Tech Commc’ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 187 (1999). The plaintiff must show that “any finding of unfairness to competitors under [the UCL] [is] tethered to some legislatively declared policy or proof of some actual or threatened impact on competition.” *Id.* at 186–87.
617. The business competition standard requires the plaintiff’s claim “to be tethered to the antitrust laws.” *Nationwide Biweekly Admin., Inc. v. Super. Ct. of Alameda Cnty.*, 9 Cal. 5th 279, 304 n.10 (2020). “To determine whether something is sufficiently ‘tethered’ to a legislative policy for the purposes of the unfair prong, California courts require a close

nexus between the challenged act and the legislative policy.” *Hodsdon v. Mars, Inc.*, 891 F.3d 857, 866 (9th Cir. 2018).

618. A UCL claim that overlaps with deficient Sherman or Cartwright Act claims fails as a matter of law. *See, e.g., PNY Techs., Inc. v. SanDisk Corp.*, No. 11-CV-04689 YGR, 2012 WL 1380271, at *15 (N.D. Cal. Apr. 20, 2012) (dismissing claim under “the UCL’s unfair-prong” because the plaintiff had “not adequately pled its federal antitrust claims” and “its UCL claims [were] not materially different than its federal antitrust claims”); *Hicks v. PGA Tour, Inc.*, 165 F. Supp. 3d 898, 911 (N.D. Cal. Feb. 9, 2016) (“[W]here the same conduct alleged to be unfair under the UCL is also alleged to be a violation of another law, the UCL claim rises or falls with the other claims.”), *aff’d in relevant part, vacated in part on other grounds*, 897 F.3d 1109 (9th Cir. 2018); *Eastman v. Quest Diagnostics Inc.*, 724 F. App’x 556, 559 n.2 (9th Cir. 2018) (similar).
619. Here, Epic’s UCL claim challenges the same conduct as its antitrust claims: namely the design and policies surrounding iOS, the App Store, and IAP. Epic does not allege otherwise. Thus, under the business competition standard, because Epic’s antitrust claims fail, its UCL claim must also be rejected. *See PNY Techs., Inc. v. SanDisk Corp.*, No. 11-CV-04689 YGR, 2012 WL 1380271, at *15 (N.D. Cal. Apr. 20, 2012).
620. Epic cannot proceed under the so-called “balancing test” applied by some courts prior to *Cel-Tech Communications, Inc. v. L.A. Cellular Telephone Co.*, 20 Cal. 4th 163, 187 (1999). Prior to *Cel-Tech*, and in some cases postdating *Cel-Tech*, courts have required a consumer plaintiff alleging unfair conduct by a business defendant to show that (1) the defendant’s conduct “is immoral, unethical, oppressive, unscrupulous or substantially injurious to consumers,” and (2) “the utility of the defendant’s conduct” is outweighed by “the gravity of the harm to the alleged victim.” *Drum v. San Fernando Valley Bar Ass’n*, 182 Cal. App. 4th 247, 257 (2010).
621. This “balancing test” is no longer good law after *Cel-Tech Communications, Inc. v. L.A. Cellular Telephone Co.*, 20 Cal. 4th 163, 187 (1999). In *Cel-Tech*, the California Supreme Court criticized this approach as “amorphous” and “provid[ing] too little guidance to courts and businesses.” *Id.* at 185. “Vague references to ‘public policy,’” the court explained, “provide too little guidance to courts and businesses,” and “fail[] to give businesses adequate guidelines as to what conduct may be challenged and thus enjoined.” *Id.* Such a standard could “sanction arbitrary or unpredictable decisions about what is fair or unfair,” and “[i]n some cases, it may even lead to the enjoining of *procompetitive* conduct and thereby undermine consumer protection, the primary purpose of the antitrust laws.” *Id.*
622. In light of the California Supreme Court’s rejection of the “amorphous” balancing test, that test cannot be used to establish liability here. There is no precedent from the California Supreme Court suggesting that any plaintiffs—consumers or competitors—can continue to rely on the balancing test to establish liability.
623. In any event, Epic cannot take advantage of this “balancing test” because it does not pursue its claims here as a “consumer.” Although Epic alleges that it has been harmed by Apple’s conduct as a “consumer” of the App Store (by “consumer” in this sense, Epic presumably

means as a developer) in that it is required to use Apple's IAP to conduct digital transactions, that does make the business competitor standard under *Cel-Tech* inapplicable. The Ninth Circuit has explained that even if a suit does not “involve[e] ‘unfairness to the defendant’s competitors,’” if the “crux of the business owners’ complaint is that [the defendant’s] conduct unfairly injures their economic interests to the benefit of other business,” the business competitor standard applies. *Levitt v. Yelp! Inc.*, 765 F.3d 1123, 1136 (9th Cir. 2014).

624. Here, the “crux” of Epic’s complaint is that Apple’s conduct has unfairly injured its economic interest in that it may not distribute iOS apps through EGS or use Epic direct payment to process transactions on its apps. *See* Dkt. 1 ¶¶ 87–102, 139–55, 287. Epic currently competes with Apple in that it offers a rival app store through which consumers may obtain Epic games, including *Fortnite*, and it seeks to alter the design of iOS and the terms of the DPLA so that it, Epic claims, can compete more effectively. Epic plainly does not bring claims as a “consumer” in this case.
625. Thus, Epic’s UCL claim necessarily falls with its Sherman Act and Cartwright Act claims.

C. State-Law Claims – Affirmative Defenses

i. Waiver and Estoppel (Epic Counts 7–10)⁵⁰

626. Epic’s state-law claims are likewise precluded by the doctrines of waiver and estoppel.
627. Under California law, “‘waiver’ means the intentional relinquishment or abandonment of a known right. Waiver requires an existing right, the waiving party’s knowledge of that right, and the party’s actual intention to relinquish the right.” *Lynch v. Cal. Coastal Comm’n*, 3 Cal. 5th 470, 475 (2017) (citation and quotation marks omitted). “Waiver always rests upon intent. The intention may be express, based on the waiving party’s words, or implied, based on conduct that is so inconsistent with an intent to enforce the right as to induce a reasonable belief that such right has been relinquished.” *Id.* (citation and quotation marks omitted).
628. Under California law, for equitable estoppel to apply, “(1) the party to be stopped must be apprised of the facts; (2) he must intend that his conduct shall be acted upon, or must so act that the party asserting the estoppel has a right to believe it was so intended; (3) the other party must be ignorant of the true state of facts; and (4) he must rely upon the conduct to his injury.” *Strong v. County of Santa Cruz*, 15 Cal. 3d 720, 725 (1975).
629. The elements of waiver and estoppel under California law are thus substantively identical to the elements under federal law. Accordingly, for all of the same reasons described above with respect to the Sherman Act claims, *see supra* § III.D.ii (¶¶ 554–60), Epic’s state-law claims, even were they otherwise meritorious, are barred by waiver and estoppel.

⁵⁰ Waiver and estoppel are addressed in §§ 17.2–17.3, pages 123–24 of the Joint Elements Submission.

(Cont’d on next page)

ii. Limitations on Actions (Epic Counts 7–10)⁵¹

630. Like its federal law claims, Epic’s state-law claims are untimely, and thus would have to be dismissed even if they had merit (which they do not).
631. “The statute of limitations under the Cartwright Act and UCL is four years.” *Bartlett v. BP W. Coast Prods. LLC*, No. 18-CV-1374, 2019 WL 2177655, at *2 (S.D. Cal. May 17, 2019) (citing Cal. Bus. & Prof. Code §§ 16750.1, 17208); *see also Garrison v. Oracle Corp.*, 159 F. Supp. 3d 1044, 1062 (N.D. Cal. 2016) (same). In California, the “common law last element accrual rule is the default,” *Aryeh v. Canon Bus. Sols., Inc.*, 55 Cal. 4th 1185, 1196 (2013), which provides that, “ordinarily, the statute of limitations runs from the occurrence of the last element essential to the cause of action,” *id.* at 1191 (quotation marks omitted). In light of the California Supreme Court’s direction that “[i]nterpretations of federal antitrust law” are instructive (though not conclusive) when construing the Cartwright Act, *id.* at 1195, courts frequently consider and resolve questions of the limitations on federal antitrust claims in tandem with Cartwright Act and UCL claims, *see Garrison*, 159 F. Supp. 3d at 1064–65 (collecting cases).
632. The same analysis that leads to the conclusion that Epic’s Sherman Act claims are time-barred, *see supra* § III.D.iii (¶¶ 561–77), also mandates that its state-law claims are untimely for the same reasons. Thus, even if Epic could make out a claim under the Cartwright Act or the UCL, its claims would have to be dismissed as untimely.

V. EPIC’S REMEDIES

633. Because Epic cannot prevail on the merits of any of its claims, it is entitled to no relief. However, even if Epic’s claims had merit, it would not be entitled to the equitable relief it seeks.

A. Declaratory Judgment (All Epic Counts)

634. The legal framework for declaratory judgment relief is set forth below, *see infra* § VII.C (¶¶ 831–39).
635. Epic is not entitled to any declaratory relief because its claims lack merit.

B. Sherman Act / Clayton Act Remedies (Epic Counts 1–6)

636. As relief for its Sherman Act claims, Epic invokes the Clayton Act and seeks sweeping equitable relief. No such relief is warranted in this case because Epic cannot establish liability under any of its Sherman Act theories. Even if liability were found, Epic’s requested injunctive relief must be rejected for a variety of reasons.
637. The Clayton Act provides, “[a]ny person, firm, corporation, or association shall be entitled to sue for and have injunctive relief, in any court of the United States having jurisdiction

⁵¹ Limitations on actions are addressed in § 17.4, pages 125–26 of the Joint Elements Submission.

over the parties, against threatened loss or damage by a violation of the antitrust law, including sections 13, 14, 18, and 19 of this title, when and under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damage is granted by courts of equity, under the rules governing such proceedings.” 15 U.S.C. § 26.

i. Injunctive Relief Sought by Epic

638. In its Complaint, Epic sought a judgment:

- A. Issuing an injunction prohibiting Apple’s anti-competitive conduct and mandating that Apple take all necessary steps to cease unlawful conduct and to restore competition;
- B. Awarding a declaration that the contractual and policy restraints complained of herein are unlawful and unenforceable;
- C. Awarding any other equitable relief necessary to prevent and remedy Apple’s anti-competitive conduct; and
- D. Granting such other and further relief as the Court deems just and proper.

Dkt. 1 at 61–62.

639. At a hearing on October 19, 2020, the Court advised Epic that its request for relief was “pretty broad and pretty vague.” Hr’g Tr. 10:19–20 (Oct. 19, 2020). The Court directed Epic to include in the parties’ joint submission on the elements “what remedy [Epic is] seeking for each one of [its] claims,” and “[t]o the extent that [Epic is] seeking for [the Court] to in effect dismantle the platform, then [the Court] want[s] to know again in advance where that authority comes from and to the extent that there are other courts that have imposed such sanctions or such remedies, [the Court would] like to have copies of those orders.” *Id.* at 10:16–24.

640. In the Appendix to the parties’ joint elements submission, Epic provided the Court with its proposed relief.

641. With respect to the proposed “iOS App Distribution Market,” Epic requested that the Court issue the following relief:

- 1. Enjoin Apple from further violations of Section 1 and/or Section 2 of the Sherman Act, the Cartwright Act and/or the California Unfair Competition Law with respect to the iOS App Distribution Market and/or the App Store on the iOS platform;
- 2. Enjoin Apple from restricting, prohibiting, impeding or deterring the distribution of iOS apps through a distribution channel other than the App Store, including by:

- A. Restricting, prohibiting, impeding or deterring users of iOS devices, through technical, contractual, financial, or other means, from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store;
 - B. Enforcing contractual provisions, guidelines or policies, or imposing technical restrictions or financial penalties, that (i) restrict, prohibit, impede or deter the distribution of iOS apps through a distribution channel other than the App Store or (ii) have the effect of impeding or deterring competition among app distributors (including competition between third party app distributors and the App Store);
 - C. Conditioning access of developers to iOS on the pricing of their apps or in-app content on other platforms;
 - D. Conditioning access of developers to the App Store on the pricing of their apps or in-app content on other platforms and/or on the pricing of their iOS apps or in-app content available through other distribution channels;
 - E. Conditioning distribution through the App Store on exclusivity or on an agreement by a developer not to distribute an iOS app through other means; and
 - F. Retaliating or threatening to retaliate against any developer on the basis of the developer's choice of iOS app distribution channel;
3. Enjoin Apple from discriminating against or disadvantaging iOS app distribution through channels other than the App Store, including by:
- A. Denying iOS app stores access to iOS functionality that the App Store has access to, including iOS functionality that assists in or is required for the downloading, execution, installation, updating and removal of apps;
 - B. Denying iOS apps that were downloaded through a distribution channel other than the App Store equivalent access to iOS functionality and/or features that iOS apps downloaded through the App Store have access to;
 - C. Deterring users from downloading, executing, installing and/or updating iOS apps from or through an app distribution channel other than the App Store, including by imposing "warning" screens or other user obstructions or deterrents on iOS apps distributed through channels other than the App Store that are not present for apps distributed through the App Store;

4. To remedy Apple's past misconduct and its anticompetitive effects in the iOS App Distribution Market and other relevant markets, and in order to restore competition in the iOS App Distribution Market, Epic respectfully requests that the Court further grant the following time-limited relief, which shall be effective from the date of this Order for a period of three (3) years or other amount of time found by the Court to be appropriate:
 - A. Enjoin Apple from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store.

Dkt. 276-1, Appendix A at 3–5.

642. With respect to the proposed "iOS In-App Payment Processing Market," Epic requested that the Court issue the following relief:
 1. Enjoin Apple from further violations of Section 1 and/or Section 2 of the Sherman Act, the Cartwright Act and/or the California Unfair Competition Law with respect to the In-App Payment Processing Market;
 2. Enjoin Apple from restricting, prohibiting, impeding or deterring the use of in-app payment processors other than Apple's In-App Purchase ("IAP"), including by:
 - A. Rejecting iOS apps for distribution through the App Store or retaliating or threatening to retaliate against any developer of an iOS app on the basis of the developer's or the app's actual or intended integration of one or more non-IAP payment processors;
 - B. Enforcing contractual provisions, guidelines or policies, or imposing technical restrictions or financial penalties, that (i) restrict, prohibit, impede or deter developers from integrating payment processors other than Apple's IAP into their apps for processing in-app purchases of in-app content or (ii) have the effect of impeding or deterring competition among in-app payment processors;
 3. Enjoin Apple from discriminating against payment processors other than Apple's IAP, iOS developers that use payment processors other than Apple's IAP, or iOS apps or app stores that use payment processors other than Apple's IAP, including by:
 - A. Denying access to iOS apps or app stores that use payment processors other than Apple's IAP, to the same iOS functionality and/or features that apps using exclusively Apple's IAP for processing in-app purchases of in-app content have;

- B. Giving preferential treatment in search to iOS apps that exclusively use Apple's IAP; and
- 4. Enjoin Apple from imposing a financial penalty or technical limitation on access to the iOS platform by iOS apps (including iOS app stores) that use payment processing solutions other than or in addition to Apple's IAP.

Dkt. 276-1, Appendix A at 6–7.

643. Epic also has proposed an “anti-circumvention” provision:

Epic respectfully requests that the Court enjoin Apple from circumventing this Order by taking steps that violate the purpose, if not the terms, of this Order, including by imposing disincentives or providing incentives that are designed to, and have the effect of, making real competition in the iOS App Distribution Market and/or the In-App Payment Processing Market impracticable.

Dkt. 276-1, Appendix A at 7.

644. And finally, Epic proposed an “anti-retaliation” provision:

Epic respectfully requests that the Court permanently enjoin Apple from taking any retaliatory actions against Epic or any of its affiliates in connection with or based on Epic's filing of this Action, the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option (“Prior Epic Actions”). For the avoidance of doubt, prohibited retaliatory actions include conduct by Apple that denies *Fortnite* access to Apple's App Store on the basis of such Prior Epic Actions.

Dkt. 276-1, Appendix A at 7.

645. On its face, Epic's requested relief is sweeping and would implement wholesale changes to the most fundamental aspects of Apple's security and business models for the App Store. Indeed, the relief Epic seeks underscores the danger of recognizing a refusal-to-deal claim premised on the notion that Apple must give Epic access to iOS and the App Store on the terms and conditions that Epic demands. The Supreme Court has warned that this kind of relief is not only contrary to the purpose of the antitrust laws, but also requires the courts to act as “central planners”:

Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited.

Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407–08 (2004).

646. Epic's requested relief would require judicial supervision of a technical redesign of iOS and the App Store, along with technical support to ensure interoperability of third-party app stores on iOS. It would require Apple to license and provide access to its protected intellectual property to third parties and competitors on terms demanded by Epic. And Epic likely would invoke the Court's continuing jurisdiction to oversee any future changes to iOS.
647. As set forth in detail below, neither the Clayton Act nor general principles of equity give the Court such broad authority to instruct Apple how it must conduct its business: an equitable antitrust remedy designed "for the purpose of alleviating injury to something other than the competitive system serves no antitrust purpose." *In re Multidistrict Vehicle Air Pollution*, 538 F.2d 231, 236 (9th Cir. 1976).
648. As but one example, Epic objects that Apple has imposed certain "contractual restrictions" on developers that, it says, inhibits competition. Dkt. 1 ¶¶ 68–81. Epic has identified a limited number of specific restrictions, namely, Sections 3.2(g) and 3.3.2(b) of the DPLA. *Id.* Were the Court to find that one or more of these provisions is unlawful, an appropriately tailored injunction would target only those provisions, leaving the balance of the DPLA intact and permitting Apple to modify (or not modify) the remainder of the contract or restructure its business operations appropriately. *See also infra* § VI.E.i.b (¶ 801).
649. The Court also is mindful of the law of unintended consequences. While Epic has proposed an injunction that presumably will benefit *it*, the dramatic changes it would impose on the existing market structure could have far-reaching and unpredictable consequences, potentially to the detriment of consumers and developers.
- 649.1 Epic made no evidentiary presentation to defend its proposed injunction. Its lead economist, Dr. Evans, did not mention the language of the proposed injunction or give any testimony about it. Neither did Dr. Athey, who struggled to recall whether she had reviewed or read the entire proposed injunction and concluded that she had read "parts of it." Trial Tr. 1545:12–1546:3 (Athey). Counsel for Epic even objected to questions to Dr. Athey as to what would be a proper remedy in this case. Trial Tr. 1862:17–20 (Athey). And Epic's security expert, Dr. Mickens, repeatedly said that many judgment calls—or what he called "complex policy issues"—would be left up to the Court to decide in each instance, including issues such as curating or prohibiting pornographic content or privacy features. Trial Tr. 2681:2–2682:8 (Mickens).
- 649.2 As a result, there no evidence before the Court defending the language of the proposed injunction or explaining why it is an appropriate remedy for the case that Epic brought.
650. For example, Epic seeks to require Apple to distribute third-party app stores through the iOS App Store. *See* Dkt. 276-1, Appendix A at 3–5. Android devices, however, already

permit sideloading and distribution of apps and third-party app stores. *See, e.g.* FOF ¶ 621 (discussing Epic’s launch of *Fortnite* on Android via sideloading). Consumers thus currently have a choice—they can choose to use an iOS device with the greater security, privacy, and reliability that come with a “walled garden,” or they can choose to use an Android device with lesser security but with more app store options. Epic’s proposed relief would eliminate that choice, foisting onto consumers a one-size-fits-all model that might benefit Epic, but inhibit competition and consumer choice.

651. As another example, Epic seeks to require Apple to permit alternatives to IAP. *See* Dkt. 276-1, Appendix A at 6. If Epic prevailed on its claims relating to IAP, Apple could decide to prohibit in-game purchases of digital content—the business model on which Epic has made its billions. Or Apple might charge different commission rates or program fees to developers that use IAP than to those that do not. Apple might require collateral or other security from non-IAP developers to ensure the payment of its commission. Epic has made no showing that any of these alternative business models (or a host of others) would be impermissible, or that any of them would improve competition or developer welfare. Epic’s entire remedial approach thus assumes that Apple will abandon certain practices while leaving everything the same, but the Court cannot constrain a private firm’s business in that way.
652. The Court’s evaluation of Epic’s proposed relief thus must take into account these considerations.

ii. Antitrust Standing and Injury⁵²

653. “‘Antitrust standing’ is a threshold requirement that every plaintiff must satisfy to bring a private suit under the federal antitrust laws.” *Lorenzo v. Qualcomm Inc.*, 603 F. Supp. 2d 1291, 1300 (S.D. Cal. 2009). “To have standing [to seek injunctive relief] under § 16 [of the Clayton Act], a plaintiff must show (1) a threatened loss or injury cognizable in equity (2) proximately resulting from the alleged antitrust violation.” *City of Rohnert Park v. Harris*, 601 F.2d 1040, 1044 (9th Cir. 1979).
654. Because “the judicial remedy cannot encompass every conceivable harm that can be traced to alleged wrongdoing,” courts have imposed additional limits “to determine whether a party injured by an antitrust violation” may seek relief. *Associated Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters*, 459 U.S. 519, 536 (1983). In assessing antitrust standing, courts also consider “(1) whether the plaintiff’s alleged injury is the type the antitrust laws were intended to forestall; (2) the directness of the injury; (3) the speculative measure of the harm; and (4) keeping the scope of complex antitrust trials within judicially manageable limits.” *Sacramento Valley Chapter of the Nat’l Elec. Contractors Ass’n v. IBEW, Local 340*, 888 F.2d 604, 605 & n.1 (9th Cir. 1989).

⁵² Antitrust standing and injury are addressed in §§ 18.2.1–18.2.2, pages 132–34 of the Joint Elements Submission.

655. The requirement of antitrust standing under the Clayton Act overlaps with the requirement of antitrust injury. To establish standing, a plaintiff must show antitrust injury. *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 113 (1986).
656. There are “four requirements for antitrust injury: (1) unlawful conduct, (2) causing an injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent.” *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1055 (9th Cir. 1999).
657. The Ninth Circuit imposes a fifth requirement, that “the ‘injured party be a participant in the same market as the alleged malefactors.’” *Glen Holly Entm’t, Inc. v. Tektronix, Inc.*, 352 F.3d 367, 372 (9th Cir. 2003) (quoting *Bhan v. NME Hosps., Inc.*, 772 F.2d 1467, 1470 (9th Cir. 1985)). “In other words, the party alleging the injury must be either a consumer of the alleged violator’s goods or services or a competitor of the alleged violator in the restrained market.” *Id.* (quoting *Eagle v. Star-Kist Foods, Inc.*, 812 F.2d 538, 540 (9th Cir. 1987)). Under this requirement, a plaintiff must show that it has “suffered [an] injury in the market where competition is being restrained”—“[p]arties whose injuries, though flowing from that which makes the defendant’s conduct unlawful, are experienced in another market do not suffer antitrust injury.” *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999).
658. Section 16 of the Clayton Act “requires a showing only of ‘threatened’ loss or damage,” and does not require “a showing of injury to ‘business or property.’” *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 111 (1986).
659. Although the standard for injunctive relief under Section 16 “differ[s] in various ways” from Section 4, a plaintiff suing under Section 16 must still prove “an injury of the type the antitrust laws were designed to prevent.” *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 111 (1986); *see also Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1028–29 (N.D. Cal. 2015) (dismissing injunctive claim because the plaintiffs allegedly suffered antitrust injury in a market other than that “in which the alleged anticompetitive conduct occurred” and the “[p]laintiffs’ alleged price injury [did not] ‘flow[] from that which ma[de] [the defendant’s] conduct unlawful’”).
660. For the reasons outlined above, *see supra* § III.A.iii (¶¶ 183–86), Epic cannot establish antitrust injury—or consequently, antitrust standing—as a matter of law. It thus is not entitled to any equitable relief under the Clayton Act.

iii. Standards for Equitable Relief⁵³

661. “According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that,

⁵³ The standards for equitable relief are addressed in § 18.2.3, pages 135–41 of the Joint Elements Submission.

considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.” *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

662. Courts apply the *eBay* factors when evaluating requests for permanent injunctive relief under Section 16. *See Steves & Sons, Inc. v. JELD-WEN, Inc.*, 988 F.3d 690, 705 (4th Cir. 2021) (applying the *eBay* factors when analyzing permanent equitable relief); *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., Ltd.*, No. 16-CV-6370, 2020 WL 1812257, at *2 (N.D. Cal. Apr. 9, 2020), *appeal filed*, No. 20-15837 (9th Cir. May 1, 2020) (“These four elements [from *eBay*] apply when considering relief under Section 16 of the Clayton Act.”); *Avaya Inc. v. Telecom Labs, Inc.*, No. 06-CV-2490, 2014 WL 2940455, at *3 (D.N.J. June 30, 2014) (holding that it is “clear that the more restrictive four-factor [*eBay*] test is necessary” in antitrust cases).
663. That is because Section 16 of the Clayton Act provides for equitable relief only “under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damages is granted by courts of equity.” 15 U.S.C. § 26. Section 16, “which was enacted by the Congress to make available equitable remedies previously denied private parties, invokes traditional principles of equity.” *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 131 (1969).
664. The Ninth Circuit has expressly held that an injunction may not issue under Section 16 absent a showing of “irreparable harm.” *Lucas v. Bechtel Corp.*, 800 F.2d 839, 847 (9th Cir. 1986) (“Under any formulation of the test, plaintiff must demonstrate that there exists a significant threat of irreparable injury.” (quotation marks omitted)). “[T]he basis of injunctive relief in the federal courts has always been irreparable harm and inadequacy of legal remedies.” *Sampson v. Murray*, 415 U.S. 61, 88 (1974).
665. The only apparent deviation from this authority is *O’Bannon v. National Collegiate Athletic Ass’n*, 7 F. Supp. 3d 955 (N.D. Cal. Aug. 8, 2014), *aff’d in part, vacated in part*, 802 F.3d 1049 (9th Cir. 2015), in which the court did not cite or discuss the controlling language in Section 16 or the Supreme Court and Ninth Circuit cases demanding application of the traditional equitable factors, or indeed, even acknowledge the four-factor test under *eBay*. *See id.* at 1007. This case is not persuasive or controlling.
666. Under *eBay*, “[t]he party seeking an injunction ‘has the general burden of establishing the elements necessary’ to obtain relief.” *BladeRoom Grp. Ltd. v. Emerson Elec. Co.*, No. 15-CV-1370, 2019 WL 1117537, at *2 (N.D. Cal. Mar. 11, 2019) (citing *Klein v. City of San Clemente*, 584 F.3d 1196, 1201 (9th Cir. 2009)).
667. Epic cannot establish any of the elements for equitable relief under *eBay*.

a. Epic Has Not Established Irreparable Harm

668. Irreparable harm is that “for which there is no adequate legal remedy.” *Ariz. Dream Act Coal. v. Brewer*, 757 F.3d 1053, 1068 (9th Cir. 2014). A plaintiff proves irreparable harm by showing that “remedies available at law, such as monetary damages, are inadequate to compensate for the injury,” *Herb Reed Enters., LLC v. Fla. Entm’t Mgmt., Inc.*, 736 F.3d

1239, 1249 (9th Cir. 2013), or that monetary damages are difficult to calculate, *see, e.g., Optinrealbig.com, LLC v. Ironport Sys., Inc.*, 323 F. Supp. 2d 1037, 1050 (N.D. Cal. 2004) (“Damage to a business’[s] goodwill is typically an irreparable injury because it is difficult to calculate.”).

669. An equitable remedy is “unavailable absent a showing of irreparable injury.” *City of Los Angeles v. Lyons*, 461 U.S. 95, 111 (1983). The named plaintiff must prove that it—and not some other person or entity—will be irreparably harmed. *See, e.g., Doran v. Salem Inn, Inc.*, 422 U.S. 922, 931 (1975) (concluding that “neither declaratory nor injunctive relief” can issue “except with respect to the particular federal plaintiffs”); *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1337–40 (Fed. Cir. 2012); *Voda v. Cordis Corp.*, 536 F.3d 1311, 1329 (Fed. Cir. 2008). Non-party affiliates of the plaintiff do not suffice. *See, e.g., Weeks Marine, Inc. v. TDM Am., LLC*, No. CIV.A. 11-3850 ES, 2011 WL 6217799, at *7 (D.N.J. Dec. 14, 2011); *Balsam Brands Inc. v. Cinmar, LLC*, No. 15-CV-4829, 2015 WL 7015417, at *5 (N.D. Cal. Nov. 12, 2015).
670. A “long delay before seeking a[n] . . . injunction implies a lack of urgency and irreparable harm.” *Miller ex rel. NLRB v. Cal. Pac. Med. Ctr.*, 991 F.2d 536, 544 (9th Cir. 1993).
671. Epic cannot show irreparable harm. Epic has been profitably distributing apps through the App Store for over ten years now. FOF ¶¶ 252-253. With respect to *Fortnite* alone, Epic has made hundreds of millions of dollars through digital transactions on the App Store. FOF ¶ 264. If Epic had instead distributed through other major platforms, it would have had to pay the same 30% commission it paid to Apple. FOF ¶ 249.18. It has not been injured as a consequence of Apple’s conduct, but rather only has been forced to pay for its licensed use of Apple’s intellectual property.
672. Moreover, Epic can and does distribute *Fortnite* and other games to iOS users through means other than the App Store. As discussed in detail above, *see supra* § II.B.ii.a (¶¶ 39–45), iOS users of *Fortnite* have access to many other devices—and accordingly, many other digital transaction platforms—through which they can play *Fortnite*. Indeed, Epic itself ran advertisements following *Fortnite*’s removal from the App Store as part of its public relations campaign, encouraging iOS users to access *Fortnite* through other devices. FOF ¶ 304.
673. Even if the Court were to focus only on iOS devices, Epic cannot prove irreparable injury for three additional and separate reasons. *First*, Epic remains free to develop and distribute a web app version of *Fortnite* that iOS users can access through the Safari web browser without going through the App Store, as other game developers have done. FOF ¶ 529.2. That Epic has chosen not to do so thus far is a consequence of its own choices, not Apple’s. *Second*, Apple has at all relevant times supported cross-platform play, including in-game purchases, so that iOS *Fortnite* players may purchase V-Bucks on another platform (such as a PC) and use them on an iOS device, without transacting through the App Store. FOF ¶¶ 165.3, 255.4, 367. iOS *Fortnite* users can even use the Safari web browser to purchase V-Bucks directly from Epic on their iPhone. FOF ¶ 165.3. Some other digital transaction platforms do not offer this cross-platform purchase feature. FOF ¶ 165.3. *Third*, there is a new category of emerging game streaming services, which facilitate access to games from

any device without using the App Store. Most relevant here, *Fortnite* is expected to soon be available on Nvidia GeForce Now for iOS users, providing an alternative means for Epic to reach *all* of the iOS consumers that it could otherwise reach through the App Store. FOF ¶ 503.

674. Epic launched its campaign against Apple only once its revenues from *Fortnite* began to sink, suggesting that Epic is not motivated by any “irreparable” harm to its business caused by Apple, but rather a desire to find ways to improve its business model at the expense of Apple’s. This ten-year, self-serving delay makes clear that Epic has not suffered irreparable injury. *See Miller ex rel. N.L.R.B. v. Cal. Pac. Med. Ctr.*, 991 F.2d 536, 544 (9th Cir. 1993).

b. Epic Has Adequate Remedies at Law

675. “‘The necessary prerequisite’ for a court to award equitable remedies is ‘the absence of an adequate remedy at law.’” *Barranco v. 3D Sys. Corp.*, 952 F.3d 1122, 1129 (9th Cir. 2020) (quoting *Dairy Queen, Inc. v. Wood*, 369 U.S. 469, 478 (1962) (internal quotation marks omitted)).
676. Whether remedies available at law are inadequate to compensate for the injury “inevitably overlaps” with the first prong of the injunctive relief analysis. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 518 F. Supp. 2d 1197, 1219 (C.D. Cal. 2007); *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., Ltd.*, No. 16-CV-6370, 2020 WL 1812257, at *2–3 (N.D. Cal. Apr. 9, 2020) (analyzing the first two elements together). However, “[i]n the permanent injunction analysis, whether the plaintiff has an ‘inadequate remedy at law’ is a separate factor.” *Macnab v. Gahderi*, No. 09-CV-4498, 2009 WL 10671026, at *5 n.4 (C.D. Cal. July 28, 2009). Some courts have held that where “there is the possibility of future wrongful conduct, a legal remedy is inadequate.” *Valley View Health Care, Inc. v. Chapman*, 992 F. Supp. 2d 1016, 1042 (E.D. Cal. 2014).
677. One of the longstanding, “basic requisites [for] the issuance of equitable relief” from a federal court is “the inadequacy of remedies at law.” *O’Shea v. Littleton*, 414 U.S. 488, 502 (1974). A plaintiff who could have pursued redress through a damages award, but waived such a request, has an adequate remedy at law. *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844–45 (9th Cir. 2020); *see also Huynh v. Quora, Inc.*, No. 18-CV-7597, 2020 WL 7495097, at *19 (N.D. Cal. Dec. 21, 2020) (“Cases in this Circuit have held that *Sonner* extends to claims for injunctive relief.”).
678. Private plaintiffs may seek damages for violations of the antitrust laws, 15 U.S.C. § 15, but where a party “explicitly represent[s] that it [is] not seeking damages,” that representation “preclude[s] the possibility of an award of damages at trial.” *Infor Global Sols. (Mich.), Inc. v. St. Paul Fire & Marine Ins. Co.*, No. 08-CV-2621, 2010 WL 11583380, at *5 (N.D. Cal. Apr. 2, 2010); *see also GSI Tech., Inc. v. United Memories, Inc.*, No. 13-CV-1081, 2016 WL 3017544, at *11 (N.D. Cal. May 26, 2016), *aff’d*, 721 F. App’x 491 (9th Cir. 2017).

679. In *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834 (9th Cir. 2020), the plaintiff amended her complaint on the eve of trial to drop her damages claim, and then urged that she had no adequate remedy at law and was entitled to equitable restitution in the same amount as her abandoned damages claim. *Id.* at 844–45. The Ninth Circuit rejected that argument, observing that the plaintiff had not “explain[ed] how the same amount of money for the exact same harm is inadequate or incomplete.” *Id.* at 844.
680. For reasons similar to those stated above, Epic has an adequate remedy at law—it could have sought damages for its alleged loss of revenues as a result of the 30% commission it agreed to pay Apple. Indeed, the plaintiffs seeking to represent a class of developers *have* sought monetary damages for their virtually identical antitrust claims. *See* Consolidated Class Action Complaint at 47, *Cameron v. Apple Inc.*, No. 19-CV-3074 (N.D. Cal. Sept. 30, 2019). Having had the opportunity to seek damages, but electing to forgo it, Epic cannot satisfy the requirement of having no adequate remedy at law. The Ninth Circuit has made clear that a party cannot artificially satisfy this element by simply choosing not to seek damages. *See Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844–45 (9th Cir. 2020).
681. Epic elected to bring this case solely for equitable relief, and having done so, it bears the burden of showing that it could not have obtained monetary damages instead. For all of the reasons above, it cannot.

c. The Balance of Hardships Favors Apple

682. In considering the balance of hardships between the plaintiff and defendant, the Court “must consider the effect on each party of the granting or withholding of the requested relief.” *Klein v. City of San Clemente*, 584 F.3d 1196, 1199–200 (9th Cir. 2009) (quoting *Winter v. Nat’l Res. Def. Council, Inc.*, 555 U.S. 7, 24 (2008)).
683. The balance of the hardships decidedly favors Apple. Epic’s proposed relief, although framed in nominally prohibitive terms, would in fact be expressly and effectively prescriptive. It sets forth a comprehensive set of measures that Apple must undertake that would fundamentally alter the way in which Apple interacts with developers and consumers. It would disrupt the comprehensive iOS ecosystem that Apple has built up over the years and would require Apple to rework its business operations. *See, e.g.* FOF ¶¶ 623-625. This would include, but is not limited to, requiring Apple to modify or alter the manner in which apps may be installed on iOS devices, requiring Apple to modify the on-device security protections that it has designed for iOS, such as sandboxing, and requiring Apple to provide apps distributed through third-party app stores access to current and future iOS device hardware and software functionality.
684. There is no dispute that the distribution of native iOS apps requires the use of Apple’s intellectual property, yet Epic’s proposed relief includes no provision for Apple to receive compensation for the licensing of its intellectual property, nor have the ability to set the terms for the usage of that intellectual property that Epic seeks to compel. *See generally* Dkt. 276-1, Appendix A. In other words, under Epic’s prescriptive injunction, it and every other developer would apparently pay only a nominal \$99 annual fee to use and benefit

from Apple’s intellectual property in perpetuity. This amounts to a forced, compulsory license of Apple’s intellectual property that is not calibrated to the property being licensed. Such a near-complete appropriation of Apple’s innovation imposes a substantial hardship on Apple. (If imposed by governmental decree, including an injunction, it also would constitute an uncompensated taking prohibited by the Fifth Amendment.)

685. Epic’s relief goes even further, though, and would prohibit Apple from controlling the distribution of app stores through the App Store *at all* for a period of three years. Epic demands that Apple be enjoined for three years “from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store.” Dkt. 276-1, Appendix A at 5. In other words, Apple has *no* rights to curate the distribution of rival app stores through the App Store—even if such a store openly engaged in the distribution of pornography, graphic violence, or other content prohibited by Apple’s guidelines, Apple could not prevent its distribution on the App Store. Epic’s requested relief thus seeks to preclude Apple from creating and enforcing the compliance of such apps with any security, privacy, and reliability standards developed by Apple.
686. Meanwhile, Epic would be the beneficiary and suffer no hardship at all. It would gain access to Apple’s intellectual property on its preferred terms, without having to go through the App Store or comply with the App Store Review Guidelines. Tellingly, Epic’s requested relief does not contemplate any payments from Epic to Apple for its continued use of Apple’s intellectual property, nor even a mechanism for evaluating what an appropriate amount of compensation for ongoing use of Apple’s intellectual property would be. Epic could “compete” with the App Store, using Apple’s intellectual property and relying upon Apple’s ongoing innovations in iOS hardware and software functionality and security, but without ever having to invest in the development of an operating system, providing compensation for use of such intellectual property, or adhering to any terms that Apple views as appropriate for the licensing of its exclusive property rights. In other words, Epic would receive all of the upside of Apple’s innovative designs, with none of the costs. The hardships plainly weigh in favor of Apple and against the injunction.
- 686.1 The effect of this injunction would not be limited to Apple. The injunction could also chill innovation broadly, particularly under Dr. Evans’ theory that a company like Apple can supposedly gain market power within two years of launching a product like the App Store. Trial Tr. 1905:16–1906:7 (Schmalensee).
687. The fact that Epic’s requested relief would purportedly enjoin unlawful activity does not mean the hardships weigh in favor of Epic. *All* injunctions are issued to prevent unlawful activity (or to compel conduct required by law). That does not automatically satisfy the balance-of-hardships factor. Rather, “[i]n each case, a court must balance the competing claims of injury and must consider the effect on each party of the granting or withholding of the requested relief.” *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 542 (1987).

d. Epic’s Proposed Relief Would Not Further the Public Interest

688. “[T]he public interest inquiry primarily addresses impact on non-parties rather than parties and takes into consideration” the “public consequences” of the injunction. *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985, 1004 (9th Cir. 2019) (quotation marks omitted).
689. Epic seeks an order from this Court precluding Apple from enforcing its longstanding prohibitions against apps containing pornography and other offensive content, as well as apps that may carry malicious code or spyware. Dkt. 276-1, Appendix A at 5. In other words, Epic seeks to compromise the security and privacy of iOS users—including children—so that it may sell more V-Bucks on terms of its own choosing.
690. Moreover, Epic’s own expert—Dr. Cragg—has explained the harm to the public interest if courts act as semi-regulators in issuing injunctive relief under the antitrust laws. In an *amicus* brief he joined in the Supreme Court, Dr. Cragg explained that a “short-run regulatory solution” that is “designed to force [a firm] to provide even more competition than it did through its creation, threatens long-run incentives to create the very products they want more of.” Brief of Expert Antitrust Economists as *Amici Curiae* in Support of Petitioners at 18–19, *Nat’l Football League v. Ninth Inning, Inc.*, No. 19-1098 (U.S. Apr. 8, 2020). In another brief recently submitted in a pending case, Dr. Cragg and other *amici* cautioned against injunctive relief in antitrust cases that would work a fundamental change in a firm’s business model, explaining that “this type of after-the-fact speculation inevitably creates disincentives for businesses to form collaborations, invest in product design and development and continually innovate, as there is no assurance that a court will not use injunctive relief to revise those decisions and impose different models.” Brief of *Amici Curiae* Antitrust Economists in Support of Petitioners at 12, *Nat’l Collegiate Athletic Ass’n v. Alston*, No. 20-512 (U.S. Nov. 18, 2020).
691. An injunction is not automatic even upon a finding of antitrust liability. *See, e.g., Wilk v. Am. Med. Ass’n*, 895 F.2d 352, 370 n.5 (7th Cir. 1990) (“The important point is that equitable relief is discretionary, and not automatically available to an injured plaintiff.”); *Moore Drug Exch. v. Eli Lilly & Co.*, No. 76-CV-2817, 1980 WL 1959, at *2 (S.D.N.Y. Nov. 21, 1980) (“A finding of an antitrust violation in the past, and an award of treble damages pursuant thereto, do not automatically entitle the plaintiff to permanent injunctive relief.”); 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 653 (4th ed. 2020 supp.) (“[I]t never follows automatically from the finding of a § 2 violation that . . . an injunction against future conduct is justified.”). If the equitable factors disfavor injunctive relief, then a court may provide an alternative remedy such as a declaration.

e. Epic’s Proposed Equitable Relief Is Barred by the Doctrine of Unclean Hands

692. Even if Epic could otherwise establish the elements of injunctive relief, its requested relief is barred by the doctrine of unclean hands.
693. Epic initiated this lawsuit and, from the outset, sought only equitable relief—first a temporary restraining order, then a preliminary injunction, and now a permanent injunction. But “equity requires that those seeking its protection shall have acted fairly and

without fraud or deceit as to the controversy in issue.” *Ellenburg v. Brockway, Inc.*, 763 F.2d 1091, 1097 (9th Cir. 1985), *abrogated on other grounds by Watkins v. Westinghouse Hanford Co.*, 12 F.3d 1517 (9th Cir. 1993). The doctrine of unclean hands therefore precludes equitable relief where the defendant establishes that “(1) the plaintiff engaged in inequitable conduct; and (2) the conduct ‘relates to the subject matter of its claims.’” *Pipe Restoration Techs., LLC v. Coast Bldg. & Plumbing, Inc.*, No. 13-CV-499, 2018 WL 6012219, at *9 (C.D. Cal. Nov. 16, 2018) (quoting *Levi Strauss & Co. v. Shilon*, 121 F.3d 1309, 1313 (9th Cir. 1997)).

694. Epic has previously taken the position that unclean hands is not a defense to liability under the federal antitrust laws. *See* Dkt. 61 at 2. That is presumably because the Sherman Act establishes a statutory tort with a damages remedy, and thus in general creates a *legal* rather than an equitable cause of action. *See Tull v. United States*, 481 U.S. 412, 422–23 (1987) Epic, however, seeks only an equitable *remedy*, and misconduct by the plaintiff may—indeed, must—be taken into account when a court is asked to impose an equitable remedy. *See, e.g., Heldman v. U.S. Lawn Tennis Ass’n*, 354 F. Supp. 1241, 1249 (S.D.N.Y. 1973) (“While the so-called clean hands doctrine may provide no defense to an antitrust violation when the merits are being decided, at this stage this equitable doctrine may well be applied”).
695. “Inasmuch as the decision whether to grant a temporary-restraining order, preliminary injunction, or permanent injunction is based on the trial court’s exercise of its equitable discretion, a district judge may decline to grant, either in whole or in part, plaintiff’s request for injunctive relief, even though plaintiff may be entitled to some relief,” and the court may “take account of the possible existence of certain defenses that historically have been available in equity even though the applicant has presented a seemingly meritorious claim for an injunction.” 11A Charles Alan Wright & Arthur R. Miller, *Federal Practice and Procedure* § 2946 (3d ed. 2020 update). Accordingly, “[a]s a matter of public policy, equitable relief typically will not be granted to an individual who has acted in bad faith with respect to the transaction that has been brought before the court.” *Id.* “[T]raditional equitable considerations such as . . . unclean hands may militate against issuing an injunction that otherwise” meets the requirements for injunctive relief. *Inst. of Cetacean Research v. Sea Shepherd Conservation Soc’y*, 725 F.3d 940, 947 (9th Cir. 2013).
696. There is no question that Epic’s conduct was inequitable. When Epic saw that revenues from *Fortnite* were dropping, it set out to find a new way to monetize its most valuable product. FOF ¶ 268. In order to do so, it had to find a way around Apple’s commission. FOF ¶ 269. It therefore devised a legal and public relations strategy to attack the longstanding App Store model, claiming anticompetitive conduct so that it could obtain use of Apple’s intellectual property for free. FOF ¶¶ 272, 282. The effort, Project Liberty, culminated in the delivery of a Trojan Horse in the form of a surreptitiously planted “hotfix” in an otherwise ordinary update to *Fortnite*, which would allow Epic to bypass IAP when activated and avoid paying Apple its commission. FOF ¶¶ 299-300. Epic did activate the “hotfix,” without alerting Apple, and raked in millions of dollars of digital transactions that should have been subject to the commission memorialized in the DPLA, which Epic had renewed just months earlier. FOF ¶ 300.

697. Nor is there any question that Epic’s inequitable conduct relates to the subject matter of the claims. Project Liberty was also designed to culminate in litigation following the removal of *Fortnite* from the App Store. FOF ¶¶ 290, 303. Epic recruited its current legal counsel into its effort long before the “hotfix” was implemented. FOF ¶ 272. Epic’s conduct does not just “relate” to the subject matter of the claims; it is inextricably linked to them in every way.
698. Epic knew what it was doing—it knew it was breaching the DPLA, it knew that it was taking advantage of Apple’s intellectual property without compensation, and it knew Apple would remove the *Fortnite* app and that litigation would follow. FOF ¶ 294. Project Liberty was designed from the start to cast Epic as the hero in its own story, but to do so, Epic had to knowingly and consciously break its agreement with Apple and divest Apple of millions of dollars in revenue.
699. Accordingly, Epic engaged in inequitable conduct and that conduct related to the claims in this case. Epic therefore comes to this Court with unclean hands and cannot obtain the sweeping equitable relief that it seeks.

iv. Epic’s Proposed Injunction Is Overbroad⁵⁴

700. “Once plaintiffs establish they are entitled to injunctive relief, the district court has broad discretion in fashioning a remedy.” *Orantes-Hernandez v. Thornburgh*, 919 F.2d 549, 558 (9th Cir. 1990); *FTC v. John Beck Amazing Profits LLC*, 888 F. Supp. 2d 1006, 1011 (C.D. Cal. 2012), *aff’d*, 644 F. App’x 709 (9th Cir. 2016) (“Courts enjoy broad discretion in fashioning suitable relief and defining the terms of a permanent injunction.”).
701. Even if Epic otherwise was entitled to equitable relief (and to be clear, it is not), Epic’s requested relief is far too broad in several respects.
702. *First*, Epic seeks unprecedented relief in the form of a dramatic restructuring of Apple’s business model.
703. Although Epic’s requested relief is phrased as a prohibitive injunction, in fact, it demands that Apple make affirmative changes to the design of the App Store in numerous ways. Epic requests that Apple be enjoined from “[r]estricting” through “technical” or “contractual” means the “downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store.” Dkt. 276-1, Appendix A at 3. The “technical” restrictions to which Epic refers are core aspects of the design of iOS—a “walled garden” environment that allows for the secure distribution of curated apps. FOF ¶ 46, 530. Apple has been operating the App Store in this way since its launch in 2008, and an entire ecosystem has been built around this core concept. FOF ¶ 46. To require Apple to redesign iOS in the way Epic demands would work a fundamental change in the entire ecosystem that the App Store supports.

⁵⁴ The scope of injunctive relief is addressed in § 18.3.1, pages 142–49 of the Joint Elements Submission.

704. Likewise, Epic’s demand that Apple be enjoined from requiring the use of IAP for digital transactions would require Apple to redesign the App Store and develop a new model of compensation. IAP is an integrated feature of the App Store that provides many benefits to developers and consumers, including allowing smaller developers to benefit from a central payment feature that consumers are already familiar with. FOF ¶¶ 76-78. It also is the way that Apple receives compensation for its licensing of the intellectual property that comprises iOS and the App Store. FOF ¶ 59. Removing IAP as an integrated feature of the App Store would not only require a fundamental redesign, it also would devalue the platform as a whole.
705. This relief is unprecedented. No court has ever required a company to relinquish its rights in its own intellectual property on terms demanded by a competitor, or to tear down and rebuild the most basic components of its business model. Epic does not seek simply to compel Apple to stop doing something; it seeks to compel Apple to make affirmative changes to the iOS that would be beneficial to Epic, at the expense of Apple’s customers.
706. Although this Court requested that Epic provide precedential support for the relief it seeks, Hrg. Tr. at 10:22–24 (Oct. 19, 2020), Epic has provided none. In a prior submission, Epic provided a catalog of general principles of law regarding the permissible scope of equitable relief. *See* Dkt. 276 at 144–46 (e.g., “[a] court may enter an order that eliminates the consequences of the defendant’s illegal conduct” (quotation marks omitted)). None of the cases invoked by Epic required a company to redesign its proprietary software (including integration of that software with its hardware as appropriate) from the ground up to accommodate a competitor seeking to use that intellectual property for its own purposes.
707. For example, Epic cited *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) for the proposition that a court may enter an order that “den[ies] to the defendant the fruits of its statutory violation, and ensure[s] that there remain no practices likely to result in monopolization in the future.” *Id.* at 103. The D.C. Circuit in *Microsoft* of course *vacated* the divestiture remedy ordered by the district court, and thus Epic’s citation is not even responsive to the Court’s request, but even still, that broad statement of law does nothing more than assert the basic proposition that a Clayton Act remedy must be tailored to the alleged antitrust violation. So too with Epic’s assertion that a court may enter an order that “eliminat[es] the consequences of the [defendant’s] illegal conduct.” *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679, 698 (1978). These cases do nothing to establish the boundaries of the Court’s equitable authority or the scope of the appropriate relief in a case like this.
708. The so-called “non-discrimination” orders that Epic cites also do not support the relief that it is seeking here. *See Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1201, 1225 (9th Cir. 1997); *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 321, 352 (D. Mass. 1953). In none of those cases was the defendant enjoined to implement an entirely new business model on terms dictated by the plaintiff, including a compulsory license to intellectual property in which the defendant has exclusive rights under federal law.

709. The remainder of Epic’s cited cases likewise do nothing more than offer broad statements about the power of a court to enjoin anticompetitive conduct. *See, e.g., Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 132 (1969) (enjoining “acts which are of the same type or class of unlawful acts which the court has found to have been committed”); *Lorain Journal Co. v. United States*, 342 U.S. 143, 154 (1951) (enjoining the defendant from “us[ing] its monopoly power to destroy threatened competition”). These cases do not suggest that a court-mandated restructuring of a defendant’s business model is ever permitted in an antitrust case, or that such relief would be appropriate here.
710. Although the Court has broad discretion to fashion appropriate equitable relief, “[d]iscretion is not whim.” *Martin v. Franklin Capital Corp.*, 546 U.S. 132, 139 (2005). The absence of authority supporting Epic’s requested injunction establishes that it would be an abuse of discretion to adopt the sweeping relief sought by Epic.
711. *Second*, Epic’s proposed equitable relief is overbroad in that it goes further than is needed to remedy the antitrust violations alleged.
712. Equitable relief should be based “on some clear ‘indication of a significant causal connection between the conduct enjoined or mandated and the violation found directed toward the remedial goal intended.’” *United States v. Microsoft Corp.*, 253 F.3d 34, 105 (D.C. Cir. 2001) (quoting 6C Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 653(b) (1996)).
713. Ultimately, the goal of an equitable remedy is not the “punishment of past transgression, nor is it merely to end specific illegal practices.” *Int’l Salt Co. v. United States*, 332 U.S. 392, 401 (1947), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).
714. Equitable relief in an antitrust case should not “embody harsh measures when less severe ones will do,” 3D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 325a (5d ed. 2020), nor should it adopt over regulatory requirements which will “involve the judiciary in the administration of intricate and detailed [business management],” *United States v. Paramount Pictures*, 334 U.S. 131, 163 (1948).
715. Several components of Epic’s proposed relief go further than is needed to address the allegedly anticompetitive conduct of which Epic complains.
716. For example, Epic demands that Apple be enjoined for three years “from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store.” Dkt. 276-1, Appendix A at 5. In other words, not only would Apple be *required* to distribute its competitors’ app stores through the App Store, it also would be *prohibited* from screening or curating those apps *at all*. An app store could openly market itself as containing illegal or inappropriate content, or could contain code that threatens the security or privacy of users and/or their devices, yet Apple would have no right under Epic’s demanded relief to stop the distribution of that rival app store through the App Store. This

relief amounts to nothing more than a demand that Apple affirmatively assist Epic in its efforts to succeed as a competitor, and that Apple handicap itself by removing the screening features of the App Store that make it desirable to customers in the first place.

717. As another example, Epic demands that Apple be enjoined “from taking any retaliatory actions against Epic or any of its affiliates in connection with” Project Liberty or the lawsuit. Dkt. 276-1, Appendix A at 7. This relief would require Apple to continue to deal with a competitor who has evinced a willful disregard for its contractual relationship with Apple. Even if Apple were required to license out its intellectual property, it should not be compelled to continue to do business with a company that refuses to honor its contracts with Apple. This request for relief is nothing more than punishment for Apple and a windfall for Epic. Even if Epic is correct that Apple must allow “sideloading” of alternative app stores, there is no basis for its demand that Apple be compelled to distribute EGS through the App Store, particularly when Epic has given Apple good reason to doubt that it will abide by the terms of the DPLA, including the App Store Review Guidelines. *See Technical Res. Servs., Inc. v. Dornier Med. Sys., Inc.*, 134 F.3d 1458, 1467 (11th Cir. 1998) (identifying “the past litigiousness of, and prior disputes with,” the plaintiff as a valid procompetitive justification for a course of dealing).
718. *Third*, Epic’s proposed equitable relief is overbroad in that it extends beyond Epic, and purports to bind Apple with respect to *all* developers.
719. “Where relief can be structured on an individual basis, it must be narrowly tailored to remedy the specific harm shown.” *Bresgal v. Brock*, 843 F.2d 1163, 1170 (9th Cir. 1987); *see also Zepeda v. U.S. I.N.S.*, 753 F.2d 719, 727 (9th Cir. 1983) (“[T]he injunction must be limited to apply only to the individual plaintiffs unless the district judge certifies a class of plaintiffs.”).
720. Injunctive relief may be “no more burdensome to the defendant than necessary to provide complete relief to the plaintiffs.” *Madsen v. Women’s Health Ctr., Inc.*, 512 U.S. 753, 765 (1994) (quotation marks omitted) (emphasis added); *see also Easyriders Freedom F.I.G.H.T. v. Hannigan*, 92 F.3d 1486, 1501 (9th Cir. 1996) (“[I]njunctive relief generally should be limited to apply only to named plaintiffs where there is no class certification.”). Were it otherwise, “[w]hensoever any individual plaintiff suffered injury as the result of official action, he could merely file an individual suit as a pseudo-private attorney general and enjoin the [defendant] in all cases. But such broad authority has never been granted to individual plaintiffs absent certification of a class.” *Zepeda v. U.S. I.N.S.*, 753 F.2d 719, 728 n.1 (9th Cir. 1983).
721. Epic opted out of the pending class action brought by developers challenging the same conduct and instead elected to pursue this case individually. It was entitled to pursue this case individually, but having done so, it cannot assume the mantle of a “pseudo-private attorney general” and purport to vindicate the interests of all developers. Even if Epic is correct that specific contractual provisions (for example) could be enjoined, that relief would extend only to the contract between Apple and Epic. Epic has no standing to seek relief on behalf of any other developers, much less all of them. Equitable relief must be “no more burdensome to the defendant than necessary to provide complete relief to the

plaintiffs.” *Madsen v. Women’s Health Ctr., Inc.*, 512 U.S. 753, 765 (1994) (quotation marks omitted). Any injunctive relief to which Epic might be entitled thus must be limited to apply only to Epic.

722. To the extent Epic relies on cases brought by the government to support an expansive view of the appropriate scope of injunctive relief in a case brought by a private party, that analogy is inapt. “[A] suit instituted by the government for the benefit of society as a whole” is fundamentally different to “a claim brought by a private litigant.” *Alberta Gas Chemicals Ltd. v. E.I. Du Pont De nemours & Co.*, 826 F.2d 1235, 1239 (3d Cir. 1987); *see also United States v. Borden Co.*, 347 U.S. 514, 518–19 (1954) (“[T]he scheme of the statute is sharply to distinguish between Government suits, either criminal or civil, and private suits for injunctive relief or for treble damages.”). “The Government seeks its injunctive remedies on behalf of the general public; the private plaintiff, though his remedy is made available pursuant to public policy as determined by Congress, may be expected to exercise it only when his personal interest will be served.” *Borden Co.*, 347 U.S. at 518. The limits on injunctions sought by private parties and the government are therefore not coextensive. *Howard Hess Dental Labs. Inc. v. Dentsply Int’l, Inc.*, 602 F.3d 237, 249 (3d Cir. 2010); *see also Int’l Tel. & Tel. Corp. v. Gen. Tel. & Elecs. Corp.*, 518 F.2d 913, 927 (9th Cir. 1975) (observing in private-plaintiff cases that the public “enjoy[s] none of the safeguards of the public-interest standards and expertness which presumably guide the government when it is a plaintiff”), *disapproved on other grounds by Cal. v. Am. Stores Co.*, 495 U.S. 271 (1990).
723. *Fourth*, Epic’s proposed equitable relief is overbroad in that it has no geographical limitations.
724. “Although there is no bar against nationwide relief in federal district court or circuit court, such broad relief must be *necessary* to give prevailing parties the relief to which they are entitled.” *California v. Azar*, 911 F.3d 558, 582 (9th Cir. 2018) (quotation marks omitted) (emphasis in original). “This rule applies with special force where there is no class certification.” *Id.*
725. As set forth above, *see supra* § II.C (¶¶ 152–59), the relevant market at issue in this case is limited to the United States from the consumer side. For that reason alone, the relief cannot require Apple to make changes to the operation of the App Store storefront in other countries.
726. Moreover, the FTAIA limits the geographic reach of any injunction because it limits the reach of any claim arising under Sections 1 or 2 of the Sherman Act. *See* 15 U.S.C. § 6a. The Ninth Circuit has accordingly vacated international injunctions where the district court gave insufficient attention to their intrusion on foreign commerce. *See Calnetics Corp. v. Volkswagen of Am., Inc.*, 532 F.2d 674, 693 (9th Cir. 1976); *see also United States v. Gen. Elec. Co.*, 115 F. Supp. 835, 842 (D.N.J. 1953) (tailoring injunction to avoid subjecting defendant to conflicting obligations under foreign and domestic law).
727. Just as the FTAIA limits the scope of liability in this case, *see also supra* § III.A.iv (¶¶ 187–96), it also limits the scope of the available relief.

728. *Fifth*, Epic’s requested relief is too vague.
729. An order granting an injunction must “state the reasons why it issued,” “state its terms specifically,” and “describe in reasonable detail—and not by referring to the complaint or other document—the act or acts restrained or required.” Federal Rule of Civil Procedure 65(d)(1); *see also United States v. Holtzman*, 762 F.2d 720, 726 (9th Cir. 1985) (an injunction must be “reasonably clear so that ordinary persons will know precisely what action is proscribed”).
730. “[Rule 65] was designed to prevent uncertainty and confusion on the part of those faced with injunctive orders, and to avoid the possible founding of a contempt citation on a decree too vague to be understood.” *Columbia Pictures Indus., Inc. v. Fung*, 710 F.3d 1020, 1047 (9th Cir. 2013) (quotation marks omitted); *see also Reno Air Racing Ass’n, Inc. v. McCord*, 452 F.3d 1126, 1134 (9th Cir. 2006) (“The benchmark for clarity and fair notice is not lawyers and judges, who are schooled in the nuances of [the] law,” but instead the “lay person, who is the target of the injunction”).
731. Several components of Epic’s requested relief fail to provide sufficient clarity to Apple to understand what is prohibited.
732. Most glaring is the “anti-circumvention” request, which would “enjoin Apple from circumventing this Order by taking steps the violate the purpose, if not the terms, of this Order, including by imposing disincentives or providing incentives that are designed to, and have the effect of, making real competition in the iOS App Distribution Market and/or the In-App Payment Processing Market impracticable.” Dkt. 276-1, Appendix A at 7. If Epic believes there are ways Apple could “circumvent[]” the requested relief without actually violating it, it should spell those limitations out in the relief so that Apple can understand what is permitted. It would be decidedly inequitable if Apple were to make substantial changes to its business model in response to the relief, only to be haled back into Court by Epic on the theory that it has violated the “purpose” of the ordered relief.
733. More generally, this Court is not in a position to oversee Apple’s business operations on a going-forward basis. Any relief entered in this case must be complete on the day the judgment is rendered and allow both parties to conform their conduct accordingly, with no ongoing judicial involvement. Epic’s proposed relief fails that standard.

C. State-Law Remedies (Epic Counts 7–10)⁵⁵

734. The Cartwright Act provides that “[a]ny person who is injured in his or her business or property by reason of anything forbidden or declared unlawful by this chapter, may sue therefor” to obtain “preliminary or permanent injunctive relief when and under the same conditions and principles as injunctive relief is granted by courts generally under the laws of this state and the rules governing these proceedings.” Cal. Bus. & Prof. Code § 16750(a).

⁵⁵ State-law remedies are addressed in §§ 18.3–18.4.1, pages 150–54 of the Joint Elements Submission.

735. The UCL provides that “[a]ny person who engages, has engaged, or proposes to engage in unfair competition may be enjoined in any court of competent jurisdiction. The court may make such orders or judgments, including the appointment of a receiver, as may be necessary to prevent the use or employment by any person of any practice which constitutes unfair competition, as defined in this chapter, or as may be necessary to restore to any person in interest any money or property, real or personal, which may have been acquired by means of such unfair competition.” Cal. Bus. & Prof. Code § 17203.
736. The UCL provides for injunctive relief “as may be necessary to prevent the use or employment by any person of any practice which constitutes unfair competition.” Cal. Bus. & Prof. Code § 17203. “[T]he primary form of relief available under the UCL to protect consumers from unfair business practices is an injunction.” *In re Tobacco II Cases*, 46 Cal. 4th 298, 319 (2009). A private party seeking injunctive relief under the UCL may request “public injunctive relief,” *McGill v. Citibank, N.A.*, 2 Cal. 5th 945, 954 (2017), which is “relief that by and large benefits the general public and that benefits the plaintiff, if at all, only incidentally and/or as a member of the general public,” *id.* at 955 (citations, alterations, and quotation marks omitted).
737. “It has been a fundamental principle for well over a century that state law cannot expand or limit a federal court’s equitable authority.” *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 841 (9th Cir. 2020). Thus, “a federal court must apply traditional equitable principles before awarding” equitable relief under state law. *Id.*; *see also Roper v. Big Heart Pet Brands, Inc.*, No. 19-CV-406, 2020 WL 7769819, at *9 (E.D. Cal. Dec. 30, 2020) (applying *Sonner* to claim for injunctive relief).
738. Any equitable relief issued under state law must therefore comport with the principles and limitations outlined above with respect to the Sherman Act claims. *See supra* § V.B.iii (¶¶ 662–734).
739. “[T]he Commerce Clause precludes the application of a state statute to commerce that takes place wholly outside of the State’s borders, whether or not the commerce has effects within the State.” *Healy v. Beer Inst., Inc.*, 491 U.S. 324, 336 (1989) (alteration and quotation marks omitted).
740. Any equitable relief issued under state law must therefore be limited to California. Otherwise, state law would reach conduct taking place wholly outside the State of California, in violation of the Commerce Clause.

VI. APPLE’S CLAIMS

A. Breach of Contract (Apple Count I)

741. Under California law, “the elements of a cause of action for breach of contract are (1) the existence of the contract, (2) plaintiff’s performance or excuse for nonperformance, (3) defendant’s breach, and (4) the resulting damages to the plaintiff.” *Oasis W. Realty, LLC v. Goldman*, 51 Cal. 4th 811, 821 (2011); *accord Reichert v. Gen. Ins. Co. of Am.*, 68 Cal. 2d 822, 830 (1968); CACI No. 303 (2020).

742. “A contract is an agreement to do or not to do a certain thing.” Cal. Civ. Code § 1549. To prove the existence of a contract, a plaintiff must show (1) the parties were “capable of contracting” (i.e., they were not “minors, persons of unsound mind, and persons deprived of civil rights”), (2) each party freely communicated its assent to the terms of the contract, (3) the objects to which the parties agreed were lawful when the contract was made, and (4) the contract provided “sufficient cause or consideration.” Cal. Civ. Code §§ 1550, 1556, 1565, 1595, 1596, 1605; *see also Robinson v. Magee*, 9 Cal. 81, 83 (1858) (“A contract is a voluntary and lawful agreement, by competent parties, for a good consideration, to do or not to do a specified thing.”).
743. To establish that a contract is lawful, the plaintiff must show only that at least one objective of the contract is lawful. *Koenig v. Warner Unified Sch. Dist.*, 41 Cal. App. 5th 43, 55 (2019). “Where a contract has several distinct objects, of which one at least is lawful, and one at least is unlawful, in whole or in part, the contract is void as to the latter and valid as to the rest.” Cal. Civ. Code § 1599; *see also Fair v. Bakhtiari*, 195 Cal. App. 4th 1135, 1157 (2011) (“Civil Code section 1599 codifies the common law doctrine of severability of contracts.”).
744. The DPLA constitutes a lawful contract, particularly as to those provisions breached by Epic.
745. To prove that it performed its obligations under the contract, a plaintiff must show that “there has been no willful departure from the terms of the contract [by the plaintiff], and no omission of any of its essential parts, and that the [plaintiff] has in good faith performed all of its substantive terms.” *Connell v. Higgins*, 170 Cal. 541, 556 (1915); CACI No. 312 (2020); *accord Posner v. Grunwald-Marx, Inc.*, 56 Cal. 2d 169, 186–87 (1961); *Kossler v. Palm Springs Devs., Ltd.*, 101 Cal. App. 3d 88, 101 (1980).
746. Breach is an “unjustified or unexcused[] failure to perform a contract[ual]” obligation. CACI No. 303 (2020), Sources and Authority (citing 1 Witkin, Summary 10th Contracts § 847 (2005)).
747. Epic breached the DPLA in two broad respects. *First*, Epic breached those provisions that require developers not to “hide, misrepresent or obscure any features, content, services or functionality” in its apps, FOF ¶ 107, or “provide, unlock or enable additional features or functionality” through any mechanisms outside of the App Store, by implementing the “hotfix” into the iOS version of *Fortnite*, FOF ¶ 106.4. *Second*, Epic breached its obligation to pay Apple “a commission equal to thirty percent (30%) of all prices payable by each end-user” for “sales of Licensed Applications [including any content, functionality, extensions, stickers, or services offered in the software application] to End-Users,” by not paying Apple its 30% commission on transactions executed through Epic Direct Payment. FOF ¶ 109.1.
748. To prove causation, a plaintiff must show “the breach was a substantial factor in causing the damages.” *US Ecology, Inc. v. California*, 129 Cal. App. 4th 887, 909 (2005); CACI No. 303 (2020).

749. Apple has been harmed by Epic’s breach by being deprived of its contractual 30% commission on digital transactions executed through Epic Direct Payment.
750. Epic has stipulated to all elements of Apple’s breach of contract claim. Accordingly, unless Epic can prove one or more of its affirmative defenses, Epic is liable for breach of contract.⁵⁶

B. Breach of Implied Covenant of Good Faith and Fair Dealing (Apple Count II)

751. “The covenant of good faith and fair dealing, implied by law in every contract, exists merely to prevent one contracting party from unfairly frustrating the other party’s right to receive the benefits of the agreement actually made.” *Durell v. Sharp Healthcare*, 183 Cal. App. 4th 1350, 1369 (2010) (emphasis and citation omitted). While “[a] breach of the implied covenant of good faith is a breach of the contract,” “‘breach of a specific provision of the contract is not . . . necessary’ to a claim for breach of the implied covenant of good faith and fair dealing.” *Thrifty Payless, Inc. v. The Americana at Brand, LLC*, 218 Cal. App. 4th 1230, 1244 (2013) (quoting *Carma Developers (Cal.), Inc. v. Marathon Dev. Cal., Inc.*, 2 Cal. 4th 342, 373 (1992)); CACI No. 325 (2020).
752. “In California, the factual elements necessary to establish a breach of the covenant of good faith and fair dealing are: (1) the parties entered into a contract; (2) the plaintiff fulfilled his obligations under the contract; (3) any conditions precedent to the defendant’s performance occurred; (4) the defendant unfairly interfered with the plaintiff’s rights to receive the benefits of the contract; and (5) the plaintiff was harmed by the defendant’s conduct.” *Rosenfeld v. JPMorgan Chase Bank, N.A.*, 732 F. Supp. 2d 952, 968 (N.D. Cal. 2010) (citing CACI No. 325 (2020)).
753. Because Epic has stipulated to its breach of contract, there is no need to separately analyze its liability for breach of the covenant of good faith and fair dealing.⁵⁷

C. Quasi-Contract / Unjust Enrichment (Apple Count III)⁵⁸

754. Even if the DPLA were unenforceable, Epic would still be required to compensate Apple for Epic’s ongoing use of Apple’s intellectual property, including that covering iOS, the App Store, Apple’s APIs, and SDK, as well as for access to Apple’s user base. Apple therefore is entitled to recovery on its Quasi Contract / Unjust Enrichment Claim, based on all the benefits that Epic took by diverting to itself commissions that belonged to Apple as compensation for numerous services provided to Epic by Apple.

⁵⁶ Apple represents that the parties are currently negotiating a stipulation and expect that it will be filed on April 9, 2021. If Epic ultimately does not stipulate to the breach-of-contract claim, Apple reserves the right to supplement these Proposed Conclusions of Law.

⁵⁷ If Epic ultimately does not stipulate to the breach-of-contract claim, Apple reserves the right to supplement these Proposed Conclusions of Law.

⁵⁸ Quasi-contract and unjust enrichment are addressed in §§ 14–14.2, pages 110–12 of the Joint Elements Submission.

755. Under California law, “unjust enrichment is an action in quasi-contract,” *Paracor Fin., Inc. v. Gen. Elec. Capital Corp.*, 96 F.3d 1151, 1167 (9th Cir. 1996), under which a “restitutionary obligation” may arise even absent “a privity of relationship between the parties,” *Hartford Cas. Ins. Co. v. J.R. Mktg., L.L.C.*, 61 Cal. 4th 988, 998 (2015). A quasi-contract/unjust-enrichment claim may thus be “plead[ed] in the alternative” to a breach of contract claim. *Verde Media Corp. v. Levi*, No. 14-CV-891-YGR, 2015 WL 374934, at *8 (N.D. Cal. Jan. 28, 2015) (“[P]laintiff may plead in the alternative and ‘assert claims based on both the existence and the absence of a binding agreement between the parties.’”); *Hawthorne v. Umpqua Bank*, No. 11-CV-6700-YGR, 2012 WL 1458194, at *3 (N.D. Cal. Apr. 26, 2012) (same).
756. “The doctrine applies where plaintiffs, while having no enforceable contract, nonetheless have conferred a benefit on defendant which defendant has knowingly accepted under circumstances that make it inequitable for the defendant to retain the benefit without paying for its value.” *Hernandez v. Lopez*, 180 Cal. App. 4th 932, 938 (2009). Thus, if Epic were to succeed in proving one of its affirmative defenses to Apple’s breach-of-contract claim, Epic still would have to answer in quasi-contract/unjust enrichment.
757. Under California law, “[t]he elements for a claim of unjust enrichment are ‘receipt of a benefit and unjust retention of the benefit at the expense of another.’” *Prakashpalan v. Engstrom, Lipscomb & Lack*, 223 Cal. App. 4th 1105, 1132 (2014) (quotation marks omitted). “The theory of unjust enrichment requires one who acquires a benefit which may not justly be retained, to return either the thing or its equivalent to the aggrieved party so as not to be unjustly enriched.” *Id.* (quotation marks omitted)
758. To prove the first element of a quasi-contract/unjust enrichment claim, a plaintiff must demonstrate the defendant’s “receipt of a benefit.” *Lectrodryer v. SeoulBank*, 77 Cal. App. 4th 723, 726 (2000). “The term ‘benefit’ connotes *any* type of advantage.” *Hirsch v. Bank of Am.*, 107 Cal. App. 4th 708, 722 (2003) (emphasis in original). “Thus, a benefit is conferred not only when one adds to the property of another, but also when one saves the other from expense or loss.” *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (Cal. 1996).
759. “For a benefit to be conferred, it is not essential that money be paid directly to the recipient by the party seeking restitution.” *County of Solano v. Vallejo Redevelopment Agency*, 75 Cal. App. 4th 1262, 1278 (1999) (quotation marks omitted); *see also Hirsch v. Bank of Am.*, 107 Cal. App. 4th 708, 722 (2003) (valid claim for unjust enrichment stated where banks “unjustified[ly]” collected and retained excessive fees passed through to them by third-party title companies at the expense of plaintiffs, “who absorbed the overage”).
760. Epic received a benefit. By using Epic direct payment to circumvent paying Apple its commissions, Epic received and retained the benefits of access to iOS, the App Store, Apple’s APIs and SDK, other intellectual property, and Apple’s user base. *See Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996) (“The term ‘benefit’ denotes any form of advantage.”). And to this day, Epic has not given Apple “its equivalent” in return: namely the commission. *Prakashpalan v. Engstrom, Lipscomb & Lack*, 223 Cal. App. 4th 1105, 1132 (2014) (quotation marks omitted). Thus, Epic “enjoyed the benefits of the

[agreement] without upholding its end of the bargain”: namely, paying the commission. *Alkayali v. Hoed*, No. 18-CV-777, 2018 WL 3425980, at *7 (S.D. Cal. July 16, 2018).

761. The second element of unjust enrichment requires that “the circumstances of [a benefit’s] receipt or retention are such that, as between the two persons, it is unjust for him to retain it.” *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996) (quotation marks omitted). But “[t]he fact that one person benefits another is not, by itself, sufficient to require restitution” for an unjust enrichment claim. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992). “Determining whether it is unjust for a person to retain a benefit may involve policy considerations.” *Id.* For example, “restitution is commonly denied against an innocent transferee or beneficiary, if he has changed his position after the transaction and it is impossible or impractical to restore him to his original position.” *Id.* (quotation marks omitted). “By contrast, a transferee with knowledge of the circumstances giving rise to an unjust enrichment claim may be obligated to make restitution.” *Id.* And “[w]hile the paradigm case of unjust enrichment is one in which the benefit on one side of the transaction corresponds to an observable loss on the other, the consecrated formula ‘at the expense of another’ can also mean ‘in violation of the other’s legally protected rights,’ without the need to show that the claimant has suffered a loss.” *Alkayali v. Hoed*, No. 18-CV-777, 2018 WL 3425980, at *6 (S.D. Cal. July 16, 2018) (some quotation marks omitted) (quoting Restatement (Third) of Restitution and Unjust Enrichment § 1 cmt. a (2011)).
762. It would be unjust for Epic to retain the benefits of access to iOS, the App Store, Apple’s APIs and SDKs, other intellectual property, and Apple’s user base—without paying Apple a dime. As set forth above, *see supra* § III.B.ii.d (¶ 315), Apple has intellectual property interests in many components of iOS, and is entitled to set conditions for the licensing and use of its intellectual property.
763. Epic is not an “innocent transferee or beneficiary” of all of these benefits. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992) (quotation marks omitted). Months before the “hotfix” that permitted Epic to bypass IAP was activated, Epic had begun to plan and coordinate its calculated preemptive strike against Apple. FOF ¶¶ 270-272. This effort, dubbed “Project Liberty,” was as much about Epic’s revenues and media image as it was about the antitrust laws—Epic’s revenues from *Fortnite* were falling, and Epic knew they would continue to fall. FOF ¶ 268. Epic thus sought to redefine *Fortnite* as a platform for other developers to modify, with Epic acting as the middleman and taking its share of the profit. FOF ¶ 269. But to do that, Epic had to find a way around the commission rate for use of iOS and Apple’s intellectual property. FOF ¶ 269. Its solution was Project Liberty and the accompanying “hotfix.” FOF ¶ 270, 274.3.
764. Epic had complete “knowledge of the circumstances” here. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992). The crux of Project Liberty was the “hotfix,” a surreptitious component of a regular update of *Fortnite* that would allow Epic to later activate a change in the in-app transaction processing for *Fortnite* on iOS to bypass IAP and the 30% commission. FOF ¶ 274.3. Epic smuggled this code into *Fortnite* without Apple’s knowledge or consent, and intentionally appropriated the commission that should

have been remitted to Apple as compensation for use of its intellectual property. FOF ¶¶ 299-300.

765. To be clear, Epic could have litigated this dispute without incurring liability for unjust enrichment. It could have continued as a class member in the ongoing *Cameron* litigation, or it could have opted out of the class action and brought its own lawsuit. Dkt. 118 at 30. Instead, Epic chose to engage in intentional misconduct and breach of the DPLA. *Id.* at 7–8. That is a paradigmatic example of an unjust receipt of a benefit.
766. Therefore, Apple is entitled to restitution based on all the benefits that Epic took by diverting to itself commissions that rightfully belonged to Apple as compensation for the app distribution and other services provided to Epic by Apple.

D. Indemnification (Apple Count VII)⁵⁹

767. Apple is contractually entitled to indemnification from Epic, including recovery of attorneys’ fees and costs of defending this litigation and pursuing its Counterclaims.
768. Under California law, “[a]n indemnity agreement is to be interpreted according to the language and contents of the contract as well as the intention of the parties as indicated by the contract.” *Myers Bldg. Indus., Ltd. v. Interface Tech., Inc.*, 13 Cal. App. 4th 949, 968 (1993); *see also Herman Christensen & Sons, Inc. v. Paris Plastering Co.*, 61 Cal. App. 3d 237, 245 (1976) (where the parties “have expressly contracted with respect to the duty to indemnify, the extent of that duty must be determined from the contract and not by reliance on the independent doctrine of equitable indemnity” (quotation marks omitted)). Such agreements “are construed under the same rules that govern the interpretation of other contracts.” *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600 (2016).
769. The DPLA between Apple and Epic provides, at section 10:

To the extent permitted by applicable law, You agree to indemnify and hold harmless . . . from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys’ fees and court costs . . . incurred by [Apple] and arising from or related to any of the following . . . : (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement, including Schedule 2; . . . or (vi) Your use (including Your Authorized Developers’ use) of the Apple Software or services, Your Licensed Application Information, Pass Information, metadata, Your Authorized Test Units, Your Registered Devices, Your Covered Products, or Your development and distribution of any of the foregoing.

FOF ¶ 110.

⁵⁹ Indemnification is addressed in § 15, page 113 of the Joint Elements Submission.

770. Because Epic’s claims arise from and relate to, *inter alia*, Epic’s breaches of the DPLA and its use of the Apple Software or services, Apple has the right to indemnification here. The DPLA provides that indemnification will be triggered by “[Epic’s] breach of any certification, covenant, obligation, representation or warranty in this Agreement.” FOF ¶ 110. That clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic’s “breach” of the “obligation[s]” and “covenant[s]” in the contract. *Id.*
771. It is undisputed that Epic breached the DPLA, Schedule 2, ¶ 3.4(a), by failing to pay Apple agreed-to commissions on its in-app sales through *Fortnite*, and Apple brought a series of Counterclaims in response. Under the express terms of the DPLA, therefore, Apple is entitled to indemnification here for the recovery of attorneys’ fees and costs of pursuing its Counterclaims.
772. Not only is Apple entitled to indemnification for pursuing its Counterclaims, it is also entitled to indemnification for the costs of defending this litigation. Epic’s lawsuit asserts claims “arising from or related to” its breaches of its certifications, covenants, obligations, representations, and warranties under the DPLA. FOF ¶ 110. Throughout this litigation, Epic has challenged the same “contractual provisions” and “contractual restraints,” *see, e.g.*, Dkt. 1 ¶¶ 228, 229, 262, that it breached by “covertly introduc[ing] a ‘hotfix’ into the Fortnite version 13.40 update,” *see* Dkt. 118 at 6, “clandestinely add[ing] features in violation of the guidelines and its agreements with Apple,” *id.* at 7 n.7.
773. There is no dispute that Epic’s conduct violated the DPLA. *See supra* V.A–V.B (¶¶ 742–54). Epic’s breach of these contractual obligations is related to Epic’s antitrust claims because, among other things, Epic contends that its breach was justified because the contracts themselves are allegedly illegal and unenforceable. *See* Dkt. 106 at 1 (“Epic denies that its refusal to abide by Apple’s anti-competitive scheme was in any way wrongful” because “the agreements . . . are illegal and unenforceable.”); *id.* at 17 (“Apple’s Contracts Are Illegal and Unenforceable”). Epic’s entire theory of the case is related to its breach of those agreements.
774. Epic could have litigated its antitrust claims without breaching its contract with Apple. Epic’s deliberate decision to breach first and then bring suit—all part of its coordinated legal and marketing strategy—makes all of Apple’s costs of defense covered by the contractual indemnification provision.
775. In addition, Epic’s lawsuit “aris[es] from and relat[e]s” to Epic’s “use of . . . Apple’s Software and services.” FOF ¶ 110. The indemnification clause’s language—“any claim arising from or related to”—is to be interpreted broadly. *See Rice v. Downs*, 248 Cal. App. 4th 175, 186 (2016) (“A ‘broad’ clause includes those using language such as ‘any claim arising from or related to this agreement.’” (emphases omitted)); *see also Howard v. Goldbloom*, 30 Cal. App. 5th 659, 663 (2018) (same). Epic’s entire lawsuit is an attempt to change—in fact, dictate—the terms of its “use of . . . Apple’s software,” such as its Metal, Apple’s Software Development Kit (SDK), and other software that Epic has admitted to using and has admitted is critical for the development of apps on iOS. Moreover, Epic’s claims are about its use of Apple’s services: “distribution services,” Dkt. 1 ¶ 49, and so-called “in-app payment processing services,” *id.* ¶ 16. In short, the

indemnification clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic's use of Apple's Software (such as Metal, SDKs, etc.) and Apple's distribution services, including IAP.

776. Apple, therefore, is entitled to indemnification for both the costs of defending this litigation *and* pursuing its Counterclaims, under the express language of the DPLA.

E. Epic's Affirmative Defenses⁶⁰

i. Illegality (Apple Counts I, II, and VII)⁶¹

777. Epic has raised the defense that Apple's counterclaims are barred because they are based on contracts that are illegal and unenforceable under the antitrust laws. *See* Dkt. 106 at 17. This defense may be raised under both federal law and state law.

a. Illegality Under Federal Law

778. "[W]hile the effect of illegality under a federal statute is a matter of federal law, . . . the federal courts should not be quick to create a policy of nonenforcement of contracts beyond that which is clearly the requirement of the Sherman Act." *Kelly v. Kosuga*, 358 U.S. 516, 519 (1959). But "the illegality defense should be entertained in those circumstances where its rejection would be to enforce conduct that the antitrust laws forbid." *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 81–82 (1982).
779. Courts decline to enforce a contract as in violation of the Sherman Act if "the judgment of the Court would itself be enforcing the precise conduct made unlawful by [the antitrust laws]." *Kelly*, 358 U.S. at 520; *see also El Salto, S. A. v. PSG Co.*, 444 F.2d 477, 482 (9th Cir. 1971) ("The Supreme Court has ruled that a Sherman Act violation is not an affirmative defense to a contract suit, even where the violation is inherent in the contract sued upon, so long as judicial enforcement of the contract would not be enforcing the precise conduct made unlawful by the Act."); *Kaiser Trading Co. v. Associated Metals & Minerals Corp.*, 321 F. Supp. 923, 930 (N.D. Cal. 1970) ("Although the courts will not enforce a contract that is an illegal restraint on trade, it is the contract being sued upon which must give rise to the illegal or anticompetitive effect; it is not enough that the plaintiff's general activities are anticompetitive."); *Bassidji v. Goe*, 413 F.3d 928, 936 (9th Cir. 2005) ("Both federal law and California law begin from the core proposition that whatever flexibility may otherwise exist with regard to the enforcement of 'illegal' contracts, courts will not order a party to a contract to perform an act that is in direct violation of a positive law directive, even if that party has agreed, for consideration, to perform that act.").

⁶⁰ Apple has addressed here only those affirmative defenses of Epic set forth in the Joint Elements Submission. Apple reserves the right to brief and argue any additional affirmative defenses Epic intends to assert at trial.

⁶¹ Illegality is addressed in §§ 16.1–16.1.2, pages 115–18 of the Joint Elements Submission.

780. A “plea of illegality based on violation of the Sherman Act” is disfavored, and if “a lawful sale for a fair consideration constitutes an intelligible economic transaction in itself,” it is appropriate to enforce the contract “even though [the transaction] furnished the occasion for a restrictive agreement.” *Kelly v. Kosuga*, 358 U.S. 516, 518, 521 (1959); *see also Electroglass, Inc. v. Dynatex Corp.*, 473 F. Supp. 1167, 1170 (N.D. Cal. 1979) (“Federal cases hold that the purchaser cannot avoid paying for goods received under a contract by claiming an antitrust defense.”).
781. Epic cannot avoid its obligations under the contract to remit a 30% commission to Apple for sales executed during the period in which the “hotfix” was in place.
782. *First*, Epic’s antitrust claims fail on the merits for all of the reasons described above, *see supra* § III, and thus there is nothing illegal about the contract restrictions it violated as part of Project Liberty.
783. *Second*, Apple’s commission “constitutes an intelligible economic transaction in itself.” *Kelly v. Kosuga*, 358 U.S. 516, 521 (1959). “[I]t can hardly be said to enforce a violation of the [Sherman] Act to give legal effect to a completed sale of [goods] at a fair price.” *Id.* Whatever prospective relief Epic may be entitled to in terms of its obligations under the DPLA, that does not justify its refusal to pay Apple *anything* for its use of iOS and its intellectual property for those transactions executed while the “hotfix” was in place. There is no serious question that the 30% commission Epic is obligated to pay Apple represents a “fair price,” as it is the same base commission rate charged on virtually every other game app platform except Epic’s. FOF ¶¶ 249.18, 472, 568.
784. Epic could have adhered to its contract and sought a declaratory judgment—instead, it elected to willingly violate the DPLA and refuse to pay the price agreed upon for Apple’s services and property. The Supreme Court has made clear that such a course of conduct does not absolve a party of its obligation to pay for services and goods already rendered or delivered.
785. *Third*, enforcement of the contract here would not “enforce conduct that the antitrust laws forbid.” *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 81 (1982). The antitrust laws do not forbid two parties from contracting for the compensated licensing of intellectual property. Even under Epic’s theory that the IAP requirements of the DPLA are anticompetitive, Epic *also* failed to remit to Apple a 30% commission for digital transactions effected on the iOS *Fortnite* app. Epic committed (at least) two separate breaches of contract: one for bypassing IAP, and another for not remitting the commission to Apple. Indeed, the commission is charged as “consideration for [Apple’s] services as [the developer’s] agent,” explained elsewhere to mean that Apple acts as the “agent for the *marketing and delivery*” of the developers’ apps. FOF ¶ 109. Epic’s affirmative defense of illegality under federal law, to the extent it is viable at all, would reach only the first breach and not the second.
786. This delineation among different provisions of the contract for purposes of evaluating illegality comports with the law of severability. In California, “where a single contract provision is invalid, but the balance of the contract is lawful, the invalid provision is severed, and the balance of the contract is enforced.” *Kec v. Superior Court of Orange*

Cnty., 51 Cal. App. 5th 972, 974–75 (2020). For example, when a contract is held to be unconscionable, “the strong legislative and judicial preference is to sever the offending term and enforce the balance of the agreement.” *Lange v. Monster Energy Co.*, 46 Cal. App. 5th 436, 453 (2020) (quotation marks omitted); *see also* Cal. Civ. Code § 1670.5.

787. Thus, as under the federal cases regarding illegality, the *lawful* provisions of a contract may (and indeed must) be enforced even if some provisions of a contract have been held to be illegal or unconscionable. Regardless of the disposition of Epic’s Sherman Act claims, the lawful portions of the DPLA—including the 30% commission that Epic must pay for digital in-app transactions—is unchallenged by Epic and unquestionably lawful. There is no impediment in the Sherman Act to enforcing that and the other provisions of the DPLA, including the indemnification clause.

b. Illegality Under State Law

788. State law regarding illegality also does not provide a defense for Epic.
789. Under California law, “[t]he object of a contract must be lawful when the contract is made.” Cal. Civ. Code § 1596. Among other possibilities, a contract is unlawful if it is (1) “[c]ontrary to an express provision of law,” (2) “[c]ontrary to the policy of express law, though not expressly prohibited,” or (3) “[o]therwise contrary to good morals.” Cal. Civ. Code § 1667.
790. “A contract must receive such an interpretation as will make it lawful, operative, definite, reasonable, and capable of being carried into effect, if it can be done without violating the intention of the parties.” Cal. Civ. Code § 1643.
791. “[T]he general rule [is] that the courts will deny relief to either party who has entered into an illegal contract or bargain which is against public policy.” *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 216 (1965). California courts will not “fashion an equitable remedy” where doing so involves “enforcing the precise conduct made unlawful . . . in contravention of the legislative purpose.” *Joe A. Freitas & Sons v. Food Packers, Processors & Warehousemen Local 865*, 164 Cal. App. 3d 1210, 1219 (1985).
792. “The rule that the courts will not lend their aid to the enforcement of an illegal agreement or one against public policy is fundamentally sound.” *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 218 (1965) (quotation marks omitted). However, “[w]here, by applying the rule, the public cannot be protected because the transaction has been completed, where no serious moral turpitude is involved, where the defendant is the one guilty of the greatest moral fault, and where to apply the rule will be to permit the defendant to be unjustly enriched at the expense of the plaintiff, the rule should not be applied.” *Id.* at 219 (quotation marks omitted).
793. “Where a contract has several distinct objects, of which one at least is lawful, and one at least is unlawful, in whole or in part, the contract is void as to the latter and valid as to the rest.” Cal. Civ. Code § 1599. Thus, if the alleged “illegality is collateral to the main purpose of the contract, and the illegal provision can be extirpated from the contract by means of

severance or restriction, then such severance and restriction are appropriate.” *Marathon Entm’t, Inc. v. Blasi*, 42 Cal. 4th 974, 996 (2008) (quotation marks omitted).

794. “If one of the alternative acts required by an obligation is such as the law will not enforce, or becomes unlawful, or impossible of performance, the obligation is to be interpreted as though the other stood alone.” Cal. Civ. Code § 1451.
795. “The burden ordinarily rests upon the party asserting the invalidity of the contract to show how and why it is unlawful.” *Rock River Commc’ns, Inc. v. Universal Music Grp., Inc.*, 745 F.3d 343, 350 (9th Cir. 2014) (quoting *Morey v. Paladini*, 187 Cal. 727, 734 (1922)).
796. Epic’s defense of illegality under state law fails for many of the reasons its defense under federal law fails.
797. *First*, because Apple’s conduct is not in violation of the Cartwright Act or the UCL, *see supra* § IV.A–C (¶¶ 583–633), the case presents no issue of illegality.
798. *Second*, the “transaction has been completed,” there is no serious “moral turpitude” involved, except on the part of Epic, who is “guilty of the greatest moral fault” in its willful and calculated breach of the contract, and refusing to enforce the contract for completed transactions would unjustly enrich Epic. *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 219 (1965) (quotation marks omitted); *see also supra* § VI.C (¶¶ 755–67).
799. The “moral fault” of Epic here is apparent from its course of conduct leading up to the “hotfix.” Upon seeing its *Fortnite* revenues falling, Epic embarked on a campaign to find an end-run around Apple’s licensing fees. FOF ¶¶ 268–270. It retained legal counsel and a public relations firm, leveraged resources from across the company, and devised a surreptitious way to sabotage the App Store and avoid paying Apple its lawfully agreed upon commission. FOF ¶ 272, 274, 282. Epic could have avoided all of this simply by bringing a declaratory judgment action, but instead it chose to willfully breach its contract and do everything in its power to paint Apple as the villain simply for adhering to the terms of the parties’ agreement. FOF ¶ 304–307.
800. *Third*, the allegedly unlawful contractual restrictions (restrictions on distribution of iOS apps outside of the App Store and the requirement for using IAP) are severable from the 30% commission. *Marathon Entm’t, Inc. v. Blasi*, 42 Cal. 4th 974, 996 (2008). Although those contractual limitations are core components of the DPLA, they are “collateral” to the right of Apple to collect a fee for licensing of its intellectual property. Thus, even if Epic is correct that the limitations it identifies are unlawful, it still must pay Apple the 30% commission rate that it willfully withheld as well as indemnification.

ii. Void as Against Public Policy (Apple Counts I, II, and VII)⁶²

801. Epic has raised the defense that Apple’s counterclaims are barred because they are based on contracts that are void as against public policy. *See* Dkt. 106 at 17.

⁶² Public policy is addressed in § 16.2, page 119 of the Joint Elements Submission.

802. “That is not lawful which is . . . contrary to the policy of express law, though not expressly prohibited.” Cal. Civ. Code § 1667(2); *see also Kelton v. Stravinski*, 138 Cal. App. 4th 941, 949 (2006) (“In general, a contract contrary to public policy will not be enforced.”); *Altschul v. Sayble*, 83 Cal. App. 3d 153, 162 (1978) (“There is no requirement that a contract violate an express mandate of a statute before it may be declared void as contrary to public policy.”).
803. “The authorities all agree that a contract is not void as against public policy unless it is injurious to the interests of the public as a whole or contravenes some established interest of society.” *Rosenberg v. Raskin*, 80 Cal. App. 2d 335, 338 (1947). “California has a settled public policy in favor of open competition.” *Kelton*, 138 Cal. App. 4th at 946; *see also Margolin v. Shemaria*, 85 Cal. App. 4th 891, 901 (2000) (“Both legislative enactments and administrative regulations can be utilized to further this state’s public policy of protecting consumers in the marketplace of goods and services.”).
804. A provision in a contract that obligates a party to the contract to violate the antitrust laws is void as against public policy. *See Foley v. Interactive Data Corp.*, 47 Cal. 3d 654, 713 n.12 (1988) (citing *Tameny v. Atlantic Richfield Co.*, 27 Cal. 2d 167 (1980)).
805. “Where a contract has several distinct objects, of which one at least is lawful, and one at least is unlawful, in whole or in part, the contract is void as to the latter and valid as to the rest.” Cal. Civ. Code § 1599.
806. The defense of public policy does not apply here for the same reasons the defense of illegality does not. *See supra* § V.I.E.i (¶¶ 778–801). Namely, the DPLA is not in violation of the antitrust laws and not in violation of public policy, and enforcement of the 30% commission rate would not require the Court to enforce any provision that Epic challenges as unlawful.
807. Moreover, any provisions challenged by Epic as unlawful are severable from the indemnification clause and the 30% commission that Epic is obliged to pay for Apple’s services. The portion of the agreement providing for a commission does not even mention IAP. FOF ¶ 109.

iii. Unconscionability (Apple Counts I, II, and VII)⁶³

808. Epic has raised the defense that Apple’s counterclaims are barred because “the contracts on which Apple’s counterclaims are based are unconscionable on the basis that they are contrary to the antitrust laws and unfair competition laws, as Epic respectfully requests this Court to determine on the basis of Epic’s claims against Apple.” Dkt. 106 at 17–18.
809. “[A] contract or provision, even if consistent with the reasonable expectations of the parties, will be denied enforcement if, considered in its context, it is unduly oppressive or ‘unconscionable.’” *Graham v. Scissor-Tail, Inc.*, 28 Cal. 3d 807, 820 (1981).

⁶³ Unconscionability is addressed in § 16.3, pages 120–21 of the Joint Elements Submission.

810. “Unconscionability has generally been recognized to include an absence of meaningful choice on the part of one of the parties together with contract terms which are unreasonably favorable to the other party. Phrased another way, unconscionability has both a ‘procedural’ and a ‘substantive’ element. . . . [B]oth the procedural and substantive elements must be met before a contract or term will be deemed unconscionable. Both, however, need not be present to the same degree. A sliding scale is applied so that the more substantively oppressive the contract term, the less evidence of procedural unconscionability is required to come to the conclusion that the term is unenforceable, and vice versa.” *Lhotka v. Geographic Expeditions*, 181 Cal. App. 4th 816, 821 (2010) (citations and some quotation marks omitted).
811. “If the court as a matter of law finds the contract or any clause of the contract to have been unconscionable at the time it was made the court may refuse to enforce the contract, or it may enforce the remainder of the contract without the unconscionable clause, or it may so limit the application of any unconscionable clause as to avoid any unconscionable result.” Cal. Civ. Code § 1670.5(a); *Graham*, 28 Cal. 3d at 820 n.19 (citing Cal. Civ. Code § 1670.5) (“The judicially developed concept of unconscionability has recently become a part of our statutory law.”).
812. “The procedural element of the unconscionability analysis concerns the manner in which the contract was negotiated and the circumstances of the parties at that time. The element focuses on oppression or surprise. Oppression arises from an inequality of bargaining power that results in no real negotiation and an absence of meaningful choice. Surprise is defined as the extent to which the supposedly agreed-upon terms of the bargain are hidden in the prolix printed form drafted by the party seeking to enforce the disputed terms.” *Gatton v. T-Mobile USA, Inc.*, 152 Cal. App. 4th 571, 581 (2007) (internal quotation marks and citations omitted).
813. “Unconscionability analysis begins with an inquiry into whether the contract is one of adhesion. The term contract of adhesion signifies a standardized contract, which, imposed and drafted by the party of superior bargaining strength, relegates to the subscribing party only the opportunity to adhere to the contract or reject it.” *Armendariz v. Found. Health Psychcare Servs., Inc.*, 24 Cal. 4th 83, 113 (2000) (quotation marks and alterations omitted).
814. “The substantive element of the unconscionability analysis focuses on overly harsh or one-sided results,” *Gatton*, 152 Cal. App. 4th at 586, or “whether a contractual provision reallocates risks in an objectively unreasonable or unexpected manner,” *Lhotka*, 181 Cal. App. 4th at 821. Substantive unconscionability “traditionally involves contract terms that are so one-sided as to ‘shock the conscience,’ or that impose harsh or oppressive terms.” *Wherry v. Award, Inc.*, 192 Cal. App. 4th 1242, 1248 (2011).
815. The DPLA is not unconscionable for the same reasons the defense of illegality does not apply. *See supra* § VI.E.i (¶¶ 778–801).
816. Moreover, there is nothing about the challenged provisions that “shock the conscience.” These provisions are commonplace in the industry, and in fact can be found in the

agreements of numerous other transaction platforms with which Epic does business. FOF ¶¶ 249.18, 472, 568. Apple has been using these same standard terms, in sum or substance, since 2008, FOF ¶ 48, and Epic has been operating under them since 2010, FOF ¶ 252. No other court has held such provisions to be substantively unconscionable, and there is no basis in law or fact for this Court to be the first.

817. Epic has waived any argument that the indemnification clause of the DPLA is substantively unconscionable. Epic asserted the defense of unconscionability solely on the basis that the DPLA is “contrary to the antitrust laws and unfair competition law.” Dkt. 106 at 17. Epic made no mention of any other basis for unconscionability. Having failed to timely raise the defense of unconscionability with respect to the indemnification clause or timely sought to amend, Epic cannot pursue an unconscionability defense on that basis. *See John R. Sand & Gravel Co. v. United States*, 552 U.S. 130, 133 (2008) (explaining that an affirmative must be “raise[d] at the pleadings stage and . . . is subject to rules of forfeiture and waiver”); *Arizona v. California*, 530 U.S. 392, 410 (2000) (“[A]n affirmative defense [is] ordinarily lost if not timely raised.”).
818. In any event, the indemnification provision of the DPLA is not substantively unconscionable. California courts routinely recognize that such clauses are enforceable. *See, e.g., Marin Storage & Trucking, Inc. v. Benco Contracting & Eng’g, Inc.*, 89 Cal. App. 4th 1042, 1056 (2001). In the rare cases where a clause has been held unconscionable, the clause required indemnification by a contracting party for all damages arising out of the performance of the contract, even those caused by the counterparty and for which the contracting party would otherwise be entitled to damages. *See Lennar Homes of Cal., Inc. v. Stephens*, 232 Cal. App. 4th 673, 691–93 (2014). No such circumstances are alleged here.

VII. APPLE’S REMEDIES

A. Compensatory Damages (Apple Counts I–II)⁶⁴

819. As compensation for Epic’s breach of contract and its breach of the implied covenant of good faith and fair dealing, Apple is entitled to \$3,650,315.70 in compensatory damages, plus 30% of any additional revenue taken in by Epic from iOS users using Epic’s alternative payment function from November 1, 2020 through the date of judgment.
820. Under California law, “[f]or the breach of an obligation arising from contract, the measure of damages . . . is the amount which will compensate the party aggrieved for all the detriment proximately caused thereby, or which, in the ordinary course of things, would be likely to result therefrom.” Cal. Civ. Code § 3300. Except where otherwise provided by law, “no person can recover a greater amount in damages for the breach of an obligation, than he could have gained by the full performance thereof on both sides.” *Id.* § 3358. Compensatory damages in a breach-of-contract action therefore “seek to approximate the agreed-upon performance,” and the “goal is to put the plaintiff in as good a position as he or she would have occupied if the defendant had not breached the contract.” *Lewis Jorge*

⁶⁴ Compensatory damages are addressed in § 19.1, page 155 of the Joint Elements Submission.

Constr. Mgmt., Inc. v. Pomona Unified Sch. Dist., 34 Cal. 4th 960, 967 (2004) (quotation marks omitted); *see also Brandon & Tibbs v. George Kevorkian Accountancy Corp.*, 226 Cal. App. 3d 442, 455 (1990) (“The basic object of damages is compensation, and in the law of contract the theory is that the party injured by a breach should receive as nearly as possible the equivalent of the benefits of performance.”). “[T]he nonbreaching party is entitled to recover only those damages, including lost future profits, which are ‘proximately caused’ by the specific breach.” *Postal Instant Press v. Sealy*, 43 Cal. App. 4th 1704, 1709 (1996).

821. “Contractual damages are of two types—general damages (sometimes called direct damages) and special damages (sometimes called consequential damages).” *Lewis Jorge Constr. Mgmt., Inc. v. Pomona Unified Sch. Dist.*, 34 Cal. 4th 960, 968 (2004); *see also Mission Beverage Co. v. Pabst Brewing Co., LLC*, 15 Cal. App. 5th 686, 710–11 (2017) (categorizing damages). “General damages” are those that “flow directly and necessarily from a breach of contract, or that are a natural result of a breach.” *Lewis Jorge Constr.*, 34 Cal. 4th at 968. “[S]pecial damages are those losses that do not arise directly and inevitably from any similar breach of any similar agreement,” but instead “are secondary or derivative losses arising from circumstances that are particular to the contract or the parties.” *Id.*
822. But for Epic’s breach of the DPLA, it would have paid Apple the contractually required 30% of all of the digital transactions executed by iOS users of *Fortnite*. Since Epic’s surreptitious implementation of the “hotfix” and Epic direct payment up through October 2020, users of the iOS version of *Fortnite* have made in-app purchases through Epic direct payment totaling \$12,167,719. FOF ¶ 317. Apple is entitled to 30% of those transactions as compensation for Epic’s admitted breach of contract, and Apple therefore is entitled to \$3,650,315.70 in compensatory damages as of October 31, 2020, and 30% of all transactions executed through Epic’s alternative payment system after that date.

B. Unjust Enrichment (Apple Count III)⁶⁵

823. Even if the DPLA and the 30% commission memorialized therein were unenforceable under the defense of illegality, that would not exempt Epic from having to pay for its access to iOS, the App Store, Apple’s APIs and SDK, other intellectual property, and Apple’s user base. Apple is entitled to restitution for Epic’s unjust enrichment for its use of Epic direct payment to circumvent having to pay Apple for use of Apple’s facilities and intellectual property.
824. “Under the law of restitution, an individual may be required to make restitution if he is unjustly enriched at the expense of another.” *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996); *see also First Nationwide Savings v. Perry*, 11 Cal. App. 4th 1657, 1662 (1992) (same). “[R]estitution may be awarded in lieu of breach of contract damages when the parties had an express contract, but it was procured by fraud or is unenforceable or ineffective for some reason.” *McBride v. Boughthon*, 123 Cal. App. 4th 379, 388 (2004); *see also Hartford Casualty Ins. Co. v. J.R. Mktg., LLC*, 61 Cal. 4th 988, 998 (2015).

⁶⁵ Restitution and unjust enrichment are addressed in § 19.2, page 156 of the Joint Elements Submission.

825. The “amount by which defendants were unjustly enriched” typically is “the net profit attributable to the underlying wrong.” *Am. Master Lease LLC v. Idanta Partners, Ltd.*, 225 Cal. App. 4th 1451, 1491 (2014) (quotation marks omitted). “The amount of restitution to be made is sometimes described as the ‘benefit’ received by the defendant.” *Id.* at 1487. Restitution may also be set at “the amount[] necessary to place the plaintiff in as good a position as he or she would have been had no contract been made. Consequently, an award limited to unjust enrichment is a relatively mechanical and undemanding calculation.” *Hernandez v. Lopez*, 180 Cal. App. 4th 932, 938–39 (2009) (citation, alterations, and quotation marks omitted). The award may also include “compensation, reimbursement, indemnification, or reparation for benefits derived from, or for loss or injury caused to, another.” *Dunkin v. Boskey*, 82 Cal. App. 4th 171, 198 (2000) (quotation marks omitted).
826. Even if Epic were entitled to the equitable relief it seeks, there is no question that through Epic direct payment, Epic used Apple’s intellectual property and resources—iOS, the App Store, and all of the resources that go into the maintenance and operation of those facilities—to enrich itself *without* paying compensation to Apple. As set forth above, such unpaid-for enrichment gives rise to a claim for restitution, regardless of the viability of Epic’s legal defenses to the enforcement of the contract.
827. The proper measure of damages here is 30% of Epic’s revenue obtained through use of Epic Direct Pay for iOS users. Dkt. 474 ¶ 3. That is the rate set forth in the DPLA, FOF ¶ 109, and even if the DPLA is itself unenforceable, Epic agreed that Apple would retain 30% of revenue from all transactions, and that is therefore the amount Epic has been unjustly enriched by benefitting from and taking advantage Apple’s resources without its authorization.
828. Moreover, the industry-standard base commission rate is 30%. FOF ¶ 472, 568. Thus, even if that rate were not memorialized in the DPLA, that is the fair-market rate for the services that Apple provides to developers (including Epic) through the App Store.
829. Accordingly, unjust enrichment provides an alternative basis for the award of \$3,650,315.70 to Apple, plus 30% of any transactions executed through Epic’s alternative payment system going forward, as compensation for Epic’s unauthorized use of its facilities.

C. Declaratory Judgment (Apple Count VI)⁶⁶

830. Apple is entitled to declaratory judgment that the DPLA and the License Agreement are valid and enforceable obligations.
831. “In a case of actual controversy within its jurisdiction . . . , any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be

⁶⁶ Declaratory judgment is addressed in §§ 18.1–18.1.2, 19.3, pages 128–30, 157 of the Joint Elements Submission.

sought. Any such declaration shall have the force and effect of a final judgment or decree and shall be reviewable as such.” 28 U.S.C. § 2201(a).

832. The test for declaratory relief is “whether the facts alleged, under all the circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant relief.” *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007) (quoting *Md. Cas. Co. v. Pacific Coal & Oil Co.*, 312 U.S. 270, 273 (1941)). Moreover, “the dispute [must] be definite and concrete, touching the legal relations of parties having adverse legal interests; [and must] be real and substantial and admi[t] of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts.” *Id.* (quotation marks omitted).
833. Courts have “substantial discretion in deciding whether to declare the rights of litigants” under the Declaratory Judgment Act. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 136 (2007). This “substantial” discretion permits the Court to consider “equitable, prudential, and policy arguments” for or against the declaratory relief sought. *Id.*
834. A “district court should avoid needless determination of state law issues,” “should discourage litigants from filing declaratory actions as a means of forum shopping,” and “should avoid duplicative litigation.” *Principal Life Ins. Co. v. Robinson*, 394 F.3d 665, 672 (9th Cir. 2005) (quotation marks omitted).
835. Courts also consider “whether the declaratory action will settle all aspects of the controversy; whether the declaratory action will serve a useful purpose in clarifying the legal relations at issue; whether the declaratory action is being sought merely for the purposes of procedural fencing or to obtain a ‘res judicata’ advantage; or whether the use of a declaratory action will result in entanglement between the federal and state court systems.” *Gov’t Emps. Ins. Co. v. Dizol*, 133 F.3d 1220, 1225 n.5 (9th Cir. 1998). The district court must “balance concerns of judicial administration, comity, and fairness to the litigants.” *Principal Life Ins. Co. v. Robinson*, 394 F.3d 665, 672 (9th Cir. 2005) (quotation marks omitted).
836. As evidenced by the fact that Epic has openly violated the terms of the DPLA and brought this suit, there plainly is a live controversy between the parties regarding the validity and enforceability of the DPLA, as well as the lawfulness of Apple’s termination of Epic’s DPLA and its License Agreement. The dispute is both “definite” and “concrete,” and a decree that Apple has the right to exclude *Fortnite* from the App Store and terminate Epic’s License Agreement would offer conclusive relief to Apple. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007).
837. As set forth above, Epic has admittedly breached the DPLA, and it had no justification for doing so. The terms of the DPLA are not in violation of the antitrust laws, and even if they were, that would not excuse Epic’s intentional breach and unjust enrichment of itself at the expense of Apple.
838. Therefore:

- A. The Developer Agreement and the DPLA are valid, lawful, and enforceable contracts;
- B. Apple's termination of the Developer Agreement with Epic was valid, lawful, and enforceable;
- C. Apple's termination of the DPLA with Epic for cause was valid, lawful, and enforceable;
- D. Apple has the contractual right to terminate its Developer Agreement with any or all of Epic's wholly owned subsidiaries, affiliates, and/or other entities under Epic's control, including Epic International (collectively, "Epic Affiliates"), at any time and at Apple's sole discretion; and
- E. Apple has the contractual right to terminate the DPLA with any or all of the Epic Affiliates for any reason or no reason upon 30 days written notice, or effective immediately for any "misleading, fraudulent, improper, unlawful or dishonest act relating to" the DPLA.

Dkt. 276-1, Appendix A at 8–9; Dkt. 474 ¶ 3.

D. Indemnification (Apple Count VII)⁶⁷

- 839. An express indemnity clause "is enforced in accordance with the terms of the contracting parties' agreement." *Prince v. Pac. Gas & Elec. Co.*, 45 Cal. 4th 1151, 1158 (2009).
- 840. The indemnity clause within the DPLA provides for the recovery of attorneys' fees. The clause provides:

To the extent permitted by applicable law, You [Epic] agree to indemnify, defend and hold harmless Apple, and upon Apple's request, defend Apple, its directors, officers, employees, independent contractors and agents (each an "Apple Indemnified Party") from any and all claims, losses, liabilities, damages, expenses and costs, including without limitation attorneys' fees and court costs, (collectively "Losses") incurred by an Apple Indemnified Party and arising from or related to any of the following (but excluding for purposes of this Section, any Internal Use Application for macOS that does not use any Apple Services or Certificates): (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement; (ii) any claims that Your Covered Product or metadata or the deployment, delivery, use or importation of Your Covered Product (whether alone or as an essential part of a combination) violate or infringe any third party intellectual property or proprietary rights, (iii) any Employee, Customer, Permitted Entity, or Permitted User claims about Your Covered Product, including, but not limited to, a breach of any of Your obligations

⁶⁷ Indemnification is addressed in § 19.4, pages 158–59 of the Joint Elements Submission.

under any end-user license that You include for Your Covered Product; (iv) Your use of the Apple Software, certificates or services (including, but not limited to, use of MDM, Configuration Profiles, and certificates), Your Covered Product, metadata, Deployment Devices, or Your development and deployment of any Covered Product; and/or (v) any MDM Customer claims about Your Compatible Products, as well as any claims that Your Compatible Products violate or infringe any third party intellectual property or proprietary rights.

FOF ¶ 110.

841. The indemnity clause within the DPLA provides for reimbursement of attorneys' fees by Epic in litigation between Apple and Epic. A contract providing for indemnification for "expenses and attorney's fees suffered or incurred *on account of any breach of the aforesaid obligations and covenants, any other provision or covenant of this [contract]*" contemplates indemnification for attorneys' fees arising out of a breach of the contract. *Cont'l Heller Corp. v. Amtech Mech. Servs., Inc.*, 53 Cal. App. 4th 500, 509 (1997). The clause here provides that indemnification will be triggered by "[Epic's] breach of any certification, covenant, obligation, representation or warrant in this Agreement." FOF ¶ 110. The clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic's "breach" of the "obligation[s]" and "covenant[s]" in the contract, and therefore requires indemnification of Apple's attorneys' fees in this lawsuit. Although a "court will not infer that the parties intended an indemnification provision to cover attorney fees between the parties if the provision does not specifically provide for attorney's fees *in action on the contract*," *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600 (2016) (quotation marks omitted), the contract here includes such language.
842. As set forth above, *see supra* § VI.D (¶¶ 768–77), Apple is entitled to indemnification for the attorneys' fees and court costs incurred in defending this lawsuit. Because the amount to which Apple is entitled necessarily includes fees and costs incurred during trial and post-trial proceedings, it is appropriate to defer calculation of Apple's damages under this count until resolution of those proceedings.
843. Deferral of determination of the amount of attorneys' fees to be awarded comports with Federal Rule of Civil Procedure 54(d)(2), which sets forth the default procedure for claiming an award of attorneys' fees in federal court. The Court adopts that procedure for establishing the value of Apple's indemnification claim, and may ultimately refer the issue to a magistrate judge for resolution.